Republic of the Philippines
OFFICE OF THE PRESIDENT
COMMISSION ON HIGHER EDUCATION

CHED MEMORANDUM ORDER (CMO)
No. 56
Series of 2007

SUBJECT: POLICIES AND STANDARDS FOR THE LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

In accordance with the pertinent provisions of Republic Act (RA) No. 7722, otherwise known as the *"Higher Education Act of 1994,"* by virtue of the 306th Commission en banc Resolution No. 790-2007 dated November 12, 2007 and for the purpose of rationalizing the undergraduate teacher education in the country to keep pace with the demands of global competitiveness, the following rules and guidelines are hereby adopted and promulgated by the Commission, thus:

ARTICLE I
INTRODUCTION

Section 1. Quality pre-service teacher education is a key factor in quality Philippine education. In the Philippines, the pre-service preparation of teachers is a very important function and responsibility that has been assigned to higher education institutions. All efforts to improve the quality of education in the Philippines are dependent on the service of teachers who are properly prepared to undertake the various important roles and functions of teachers. As such, it is of utmost importance that the highest standards are set in defining the objectives, components, and processes of the pre-service teacher education curriculum.

Section 2. MISSION STATEMENT

The main concern of the Ladderized Bachelor of Technical Teacher Education Program is the preparation of teachers in technical-vocational education and training (TVET) and higher education institutions who are equipped not only with strong theoretical understanding of teaching and technology, but also with practical exposure in industry. Specifically, it is expected to produce teachers who can assume the following major roles:

2.1 effective synthesizer of organized knowledge to allow analytical and critical thinking;

2.2 efficient promoter and facilitator of learning to enable the learners to develop to the fullest their potential for a continuing pursuit of self-education;

2.3 committed humanist whose clear understanding and appreciation of human ideals and values inspire learners to reach greater heights of human aspirations;

2.4 model teacher imbued with proper work attitude and values as practiced in industry; and

2.5 nationally certified trainer in his field of specialization.

ARTICLE II
AUTHORITY TO OPERATE

Section 3. All Schools, Colleges and Universities intending to offer the Ladderized Bachelor of Technical Teacher Education (BTTE) must first secure proper authority from the Commission in accordance with existing rules and regulations. The government – supported institutions i.e. (state universities and colleges (SUCs), local colleges and universities) are encouraged to adhere to the provisions of these policies and standards.

ARTICLE III
PROGRAM SPECIFICATIONS

Section 4. Degree Name

The degree program herein shall be called the Ladderized Bachelor of Technical Teacher Education (BTTE).

Section 5. Program Description and General Objective

5.1. The technical teacher education curriculum shall impart a body of knowledge, skills, attitudes, values and experiences that will provide prospective teachers with the necessary competencies essential for effective teaching.

5.2. The specified body of knowledge, skills, attitudes, values and experiences shall include the following:

5.2.1 A general education component, consistent with the CHED issuance, consisting of the humanities, languages, natural and behavioral sciences and computer proficiency, mathematics, logic and ethics aimed at developing a broadly educated, creative, cultured, morally-upright and productive person.

5.2.2 A professional studies component to include:

5.2.2.1 Philosophy and aims of technology education, curriculum development, teaching and learning processes;

5.2.2.2 The systematic study of teaching and learning principles and theories with immediate appropriate observation and laboratory experiences to provide students with first-hand knowledge in the appreciation and interpretation of these theories to classroom and industry practices and strategies; and

5.2.2.3 A direct substantial participation in teaching to provide clinical experience over a period of time under the supervision of qualified personnel from the teacher education institution.

5.2.2.4 Philippine Trainers Qualification Framework (PTTQF).

5.2.3 A specialization component that will equip the teacher with in-depth knowledge of the context and specified skills in the major field including industry exposure.

5.2.4 An instructional technology component that will equip the teacher with competencies on the use of technology in teaching and in training.

5.3. Duly authorized institutions have the option to implement any and/or both of the two models.

5.3.1 Model A

This is offered to high school graduates who could meet the admission requirements set by the College. The program of study for the General and Professional Education subjects is based on CHED Memorandum No. 30, series of 2004. The technology major subjects, on the other hand are based on competency standards indicated in the Training Regulations of the Technical Education and Skills Development Authority (TESDA). The interfacing scheme between CHED and TESDA provides the students the opportunity to exit after one, two or three years with specific job opportunities and/or allows them to pursue their studies up to the four year BTTE program giving full credit to all the subjects taken in the previous years. If a student opts to work after one year of study, he could exit from the Ladderized program with a certificate of achievement. He is also qualified to take the assessment for National Certificate (NC) administered by TESDA. Students who opt to pursue their studies can proceed to the four-year BTTE program provided they could meet the admission requirements. After finishing the BTTE Program, they shall be issued their Diploma which qualifies them to take the Licensure Examination for Teachers. **(Refer to "Annex A" for the Ladderized BTTE Program)**

5.3.2 Model B

This is offered to the graduates of the Two-Year Trade Technical Curriculum and the Three-year Diploma of Technology Program in different areas of specialization and who have at least one-year industry experience aside from the industry immersion/on-the-job training (OJT) which is part of the academic requirement of the Technical Program leading to a four-year Baccalaureate Degree (*Ladderized Bachelor of Technical Teacher Education*) and who intend to become prospective teachers in their respective areas of specialization.

ARTICLE IV
COMPETENCY STANDARDS

Section 6. Graduates of the Ladderized BTTE program are teachers who:

6.1 Have fully developed the competencies required of the Philippine Trainers Qualification Framework (PTTQF);

6.2 have the basic and higher level literacy, communication, numeracy, critical thinking, learning skills needed for higher learning;

6.3 have a deep and principled understanding of the learning processes and the role of the teacher in facilitating these processes in their students;

6.4 have a deep and principled understanding of how educational processes relate to larger historical, social, cultural, and political processes;

6.5 have a meaningful and comprehensive knowledge of the subject matter they will teach;

6.6 can apply a wide range of teaching process skills (including curriculum development, lesson planning, materials development, educational assessment, and teaching approaches);

6.7 have direct experience in the field/classroom/workshop (e.g., classroom observations, teaching assistance, practice teaching);

6.8 can demonstrate and practice the professional and ethical requirements of the teaching professions;

6.9 can facilitate learning of diverse types of learners, in diverse types of learning environments, using a wide range of teaching knowledge and skills;

6.10 can reflect on the relationships among the teaching process skills, the learning processing in the students, the nature of the content/subject matter, and the broader social forces encumbering the school and educational processes in order to constantly improve their teaching knowledge, skills and practices; and

6.11 can be creative and innovative in thinking of alternative teaching approaches, take informed risks in trying out these innovative approaches, and evaluate the effectiveness of such approaches in improving student learning; and are willing and capable to continue learning in order to better fulfill their mission as teachers.

Article V
CURRICULUM

Section 7. Curriculum Description

The Ladderized Bachelor of Technical Teacher Education has the total of 168 units. The Program is comprised of the General Education components, Professional Education subjects, Major subjects and Industry Immersion.

Section 8. Curriculum Outline

The following minimum academic units are required for graduation for the Ladderized BTTE:

SUMMARY OF THE LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION CURRICULUM

1. General Education Courses ..... 60 units

1.1	English	**9**
	English 1 Study and Thinking Skills in English	3
	English 2 Speech and Oral Communication	3
	English 3 Technical Writing in the Discipline	3
1.2	Filipino Language	**9**
	Filipino 1 Sining ng Pakikipagtalastasan	3
	Filipino 2 Pagbasa at Pagsulat sa Iba't ibang Disiplina	3
	Filipino 3 Retorika	3
1.3	Literatura /Literature	**3**
	Panitikan ng Filipinas/The Literatures of the Philippines	3
1.4	Natural Sciences	**9**
	Biological Science	3
	Earth Science	3
	Elective (Chemistry or Physics)	3
1.5	Mathematics	**6**
	Math 1 Fundamentals of Mathematics including College Algebra	3
	Math 2 Trigonometry	3
1.6	Social Sciences	**9**
	Soc Sci 1 General Psychology Including Population Education	3
	Soc Sci 2 Basic Economics with TAR, Entrepreneurship and Work Ethics	3
	Soc Sci 3 Politics and Governance with Philippine Constitution	3

1.7	Information and Communication Technology	**3**
	ICT 1 Information and Communication Technology (ICT)	3
1.8	Humanities	**6**
	Philosophy (Logic)	3
	Fundamentals of Drawing	3
1.9	Mandated Subjects	**6**
	Philippine History	3
	Life and Works of Rizal	3

2. Professional Courses ..... **51 units**

2.1	Theory and Concepts	**15**
	Adolescent Psychology	3
	Facilitating Learning	3
	Social Dimensions of Education	3
	The Teaching Profession including Code of Ethics	3
	Curriculum Development (Project Planning and Development)	3
2.2	Methods and Strategies of Teaching Technology	**21**
	Principles of Teaching	3
	Strategies of Teaching	3
	Educational Technology 1	3
	Educational Technology 2	3
	Assessment of Student Learning 1	3
	Assessment of Student Learning 2	3
	Career Guidance and Counseling	3
2.3		**12**
	Field Study 1-6	6
	Practice Teaching	6
2.4	Special Research Topic/Project	**3**
	TOTAL	**51**

3. Areas of Specialization

Any of the following areas of specializations may be selected:

3.1	Automotive Technology	57 units
3.2	Electronics Technology	57 units
3.3	Electrical Technology	57 units

3.4	Food and Service Management	57 units
3.5	Drafting Technology	57 units
3.6	Heating, Ventilating and Air-conditioning Technology	57 units
3.7	Mechanical Technology	57 units
3.8	Welding and Fabrication Technology	57 units
3.9	Civil Technology	57 units
3.10	Garments, Fashion and Design	57 units

(NOTE: Please see attached "Annex B" for the courses of different areas of specialization)

Other additional areas of specialization may be offered by HEIs provided that they follow the prescribed General and Professional Education requirements under this CMO subject to the approval of the Office of Programs and Standards.

3. **National Service Training Program (NSTP) (6) units**
4. **Physical Education (P. E.) (8) units**

Summary of Units

General Education ..... 60 units

Professional Subjects ..... 51 units

Major Subjects ..... 57 units

Physical Education Courses ..... (8) units

National Service Training Program (NSTP) ..... (6) units

Total No. of Units .....168 units

5. **One year exposure to Dual Training System (DTS)** or Industry Immersion***

** Depends upon the field of study*
***Dual Training System refers to an instructional delivery system of technical and vocational education and training that combines in-plant and in-school training based on a training plan collaboratively designed and implemented by an accredited dual system educational institution/training center and accredited dual system agricultural, industrial and business establishments.*

ARTICLE VI
COURSE SPECIFICATIONS

Section 9. Description of Courses
(See Annex C)

ARTICLE VII
GENERAL REQUIREMENTS

Section 10. Program Administration

The primary responsibility for the preparation of technical teachers within a college or university shall be exercised by a clearly defined and organized administrative and instructional unit such as a college, institute, school, department or division of education.

10.1 Dean

A Dean shall be employed and assigned full-time to provide leadership and direction to the education unit/division/department/college of the school and who shall have the following qualifications:

10.2 Qualifications of a Dean and Department Chair.

10.2.1 Holder of a master's degree or preferably DTE or Ph D. in any of the areas of specialization in the program.

10.2.2 With at least three (3) years of very satisfactory teaching experience in a technology/teacher education institution

10.2.3 With at least three (3) years of very satisfactory supervisory experience.

A full-time Dean is one whose services are available for at least 30 hours a week and who carries a regular teaching load which in no case should exceed 9 units.

10.3 Responsibilities of a Dean and Department Chair.

The Dean shall have the following functions and responsibilities:

10.3.1 Assists in the formulation of institutional policies;

10.3.2 Exercises educational leadership among the faculty by:

10.3.2.1 initiating and instituting faculty and staff development programs;

10.3.2.2 recommending the appointment, promotion or separation of faculty and non-teaching personnel in his college; and preparing and recommending the

teaching load of the faculty members, and directing and assigning them to advise students in their program of studies.

10.3.3 Coordinates and facilitates student personnel services and practicum experiences;

10.3.4 Plans a program of curriculum development with the assistance of qualified faculty members;

10.3.5 Institutes a definite program of supervision and of other administrative support services aimed at upgrading the quality of instruction;

10.3.6 Assists in the budget preparation and financial management of the College;

10.3.7 Initiates programs in research and extension services through networking, linkages, consortia, etc.

Section 11. Faculty

Members of the faculty should have academic preparation and experience appropriate to teaching technology courses.

11.1 **Qualifications of Technology Instructors/Professors**

11.1.1 Must be compliant with the training regulations of TESDA.

11.1.2 Must have at least accumulated 560 hours of Industry/job experience.

11.2 Qualifications of General and Professional Education Instructors/Professors

11.2.1 Must be a holder of an appropriate master's degree to teach his major field of specialization.

11.2.2 Have at least one (1) year of very satisfactory teaching experience in any technical-vocational or technological institution.

11.3 Load/Employment Status

11.3.1 Salary rates of faculty members should be commensurate with their rank, academic preparation, experience in instruction and research, and at least comparable with those of other faculty members who teach other baccalaureate courses.

11.3.2 At least 60% of the technical teacher education courses shall be taught by full-time instructors in the institution.

11.3.3 The regular teaching load of the technical teacher education faculty shall not exceed twenty-four (24) units for one preparation, twenty-one (21) units for two preparations; and eighteen (18) units for 3 or more preparations.

11.3.4 A regular faculty member who is assigned as a Student Teacher Supervisor/Practicum Coordinator shall plan, supervise, and evaluate student teaching experience and provide advice and counseling.

11.4 Faculty Rank

Education faculty shall be assigned academic ranks in accordance with their educational preparation, industrial experience, teaching experience, continuing professional growth and other criteria, which the individual institutions may require.

Section 12. Instructional Standards

Technical Teacher Education institutions shall maintain high standards of instruction, utilizing a variety of appropriate emerging instructional technology procedures, which contribute to the effectiveness of the teacher education students' preparation.

A system of supervision shall be instituted and implemented for the purpose of evaluating teacher competence.

The Technical Teacher Education institution may adopt textbooks which are of fairly recent edition reflecting the current trends in teaching and learning methods and content, which do not violate the laws of the Philippines and preferably written by Filipino authors.

The institution shall provide for a systematic and continuing plan of evaluation of student progress through a marking system that is consistent and consonant to the objectives set by the institution. Institutional policies shall be made known to the technical teacher education students to serve as their guide in preparing for the courses. The grade or rating of a student in each course shall be fair and just and shall reflect proficiency in the subject based on reasonable rules and standards of the school.

Section 13. Library

13.1 The library shall be adequate to support the instruction, research, and services pertinent to each teaching field. Administrative procedures and equipment shall conform to accepted modern practices, including cataloging methods, arrangements of books and periodicals, and adequate hours of accessibility. The library shall be administered, on a full-time basis, by a professionally trained and licensed librarian supported by an adequate staff. Library resources shall be adequate in quality following minimum library requirements.

13.2 The following are the minimum requirements for the library:

13.2.1 There should be adequate reading space for the student population.

13.2.2 The reading room should be able to accommodate at one seating a minimum of 15 to 20 percent of the student enrollment.

13.2.3 The library should be able to provide non-print materials such as CD-ROM, internet access, etc.

13.2.4 The library collection should have at least five (5) titles per subject. At least twenty percent (20%) of the total collection of books should be published within the last four years. The library should also carry up-to-date books, journals and periodicals that are published locally and internationally, including two (2) foreign publications.

13.2.5 A multimedia instructional center shall be maintained either as a separate unit or as a part of the library. It shall serve as a laboratory for the production of materials and educational media for instruction to include maps, charts, pictures, films, slides, tapes, curriculum materials, courses of study, computer-aided instructional materials, etc. A professionally trained personnel, having experience in both areas of instruction and educational media shall administer the center.

13.3 The open shelf system should be encouraged.

Section 14. Laboratories and Facilities

14.1 A practicum laboratory in technology education shall be maintained within or outside the campus through appropriate linkages, networking or consortium.

14.2 Specialized laboratories shall be maintained for the major fields

14.3 The technology facilities and requirements shall be based on the training regulations set by TESDA.

Section 15. Admission and Retention Requirements

15.1 Every student has the right to enroll in any school, college or university upon meeting its specific requirements and reasonable regulations. The student is expected to complete the course without prejudice to the right to transfer except in disciplinary cases and/or academic delinquency.

15.2 As a general rule, no applicant shall be enrolled in any approved course unless proper credentials as prescribed are submitted to the institution during the enrollment period.

15.3 All Technical Teacher Education institutions must have a system of selective admission and retention of students to insure that those who enter the teaching profession possess a reasonably high level of scholastic achievement and the appropriate aptitudes, interests, and personality traits. There shall be well-defined criteria for admission into the programs for technical teacher education:

15.4 Student applicants into the Ladderized BTTE program must be a high school graduate for Model A and a full-fledge Technician for Model B.

15.4.1 Admission requirements for **Model A**

15.4.1.1 The high school candidate must have at least a grade point average of 85 percent as reflected in his Form 138.

15.4.1.2 The candidate should be physically and psychologically fit.

15.4.2 Admission requirements for **Model B**

15.4.2.1 The technician candidate shall have obtained, in his technical subjects, an average of at least 85 percent or its equivalent.

15.4.2.2 The technician candidate must be at least third class certified technician (NC1) in his field of specialization.

15.4.2.3 Under the principle of recognition of prior learning, the technician candidate who has obtained a National Certificate (NC) in his field of specialization shall have his competencies credited in the regular program.

15.4.2.4 The technician candidate must have satisfied the minimum general education requirements. In case, the technician candidate lacks units in general education, bridging subjects should be taken by the candidate to fulfill the general education requirements.

15.4.2.5 The candidates should be physically and psychologically fit.

15.5 There shall be no discrimination in the selection for admission of technical teacher education students to the institution on the basis of sex, religion, race, age or socio-economic status.

15.6 Enrollment size shall take into account the faculty resources and facilities of the school.

15.7 Institutions shall apply specific criteria for admission/retention of candidates to determine specific fields of specialization/concentration and promotion to the next curriculum year.

Section 16. Research and Productive Scholarship

16.1 Technical Teacher preparation courses shall develop in the faculty and the students an attitude of inquiry and willingness to test theory against the evidence of existing classroom practices.

16.2 The strength of a technical teacher education institution shall be based on the quality and quantity of research work undertaken or currently being undertaken by teacher education faculty members and on the kind of institutional administrative and financial support given to such undertakings.

16.3 Scholarly works and reports of research activities shall be established and disseminated within and outside of the institution to encourage exchange of ideas, research findings, and development in technical teacher education.

16.4 Faculty members actively engaged in relevant and significant research work in technical teacher education shall be afforded special privileges and benefits such as reduced teaching load and/or its equivalent.

ARTICLE VIII
PROGRAM ADMINISTRATION

Section 17. Residence and Unit Requirements

17.1 No degree shall be conferred on a student under Model B unless he/she has taken the whole curriculum year (one year and one summer) of the course in the school, which is to confer the degree. Likewise, for Model A, the degree shall be conferred only on a student who has taken at least the last curriculum year of the course in the school, which is to confer the degree. The institution, however, may set its own minimum residence requirement.

17.2 No student shall be permitted to take any subject without passing the prerequisite subjects.

Section 18. Voluntary Accreditation

While the foregoing are the minimum rules and standards, technical teacher education institutions are enjoined to undertake continuing improvement through voluntary accreditation with any of the accrediting bodies recognized by the Commission on Higher Education.

Section 19. Graduate Education

Master and doctoral courses in technical teacher education shall be governed by the Policies and Standards for Graduate Education as embodied in CHED Order # 36, series of 1998 and CMO 9, series of 2003, and succeeding issuances on graduate education.

ARTICLE IX

TRANSITORY, REPEALING AND EFFECTIVITY PROVISION

Section 20. Transitory Provision

HEIs that have been granted permit or recognition for Bachelor of Technical Teacher Education (BTTE) program are required to fully comply with all the requirements in this CMO within a non-extendable period of three (3) years after the date of its effectivity. State Universities and Colleges (SUCs) and Local Colleges and Universities (LCUs) shall also comply with the requirements herein set forth.

Section 21. Sanctions

For violation of this Order, the Commission may impose such administrative sanction as it may deem appropriate pursuant to the pertinent provisions of Republic Act No. 7722, in relation to Section 69 of BP 232 otherwise known as the Higher Education Act of 1982, and Section 24 and 101 of the Manual of Regulations for Private Schools (MPRS), and other related laws.

Section 22. Separability and Repealing Clause

Any provision of this Order, which may thereafter be held invalid, shall not affect the remaining provisions.

All CHED issuances or part thereof inconsistent with provision in this CMO shall be deemed modified or repealed.

Section 22. Effectivity Clause

This CMO shall take effect after its publication in the Official Gazette or Newpaper of General Circulation.

Pasig City, Philippines. November 20, 2007.

FOR THE COMMISSION

ROMULO L. NERI
Chairman

"Annex A"

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Civil Technology

Fourth Year
Course units and Competencies
- 30 units Prof. Ed courses
- *For competencies, refer to Annex A1*

Qualification
Licensure Examination for Teachers

Exit Point

Job Opportunities
- *Civil Technology Teacher
- *Trainor
- *Training Assistant
- *Assessor

Third Year
Course units and Competencies
- 21 units Prof. Ed courses
- 16 units major courses

For competencies, refer to Annex A1

Qualification
(NO T.R.)
- Construction Management
- Soil and construction materials testing

Exit Point

Job Opportunities
- Construction Supervisor
- Soil and construction material tester
- Leadman

Second Year
Course units and Competencies
- 27 units G.E. courses
- 26 units major courses

For competencies, refer to Annex A1

Qualification
- Masonry NC Level II
- Masonry NC Level III
- Carpentry NC Level II
- Plumbing NC Level II

Exit Point

Job Opportunities
- Brick/Block Layer
- Finishing Mason
- Tile Layer
- Finish Carpenter
- Construction Painter
- Plumber
- Construction Assistant Estimator
- Engineering Aide

High School Graduates

First Year
Course units and Competencies
- 33 units G.E. courses
- 15 units major courses

For competencies, refer to Annex A1

Qualification
- Carpentry NC Level II
- Masonry NC Level I

NO T.R.

Exit Point

Job Opportunities
- Construction Helper
- Rough Carpenter
- Rebar Worker
- Steel Man
- Steel Fixer
- *Surveyor Aide

"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
CT 111 Occupational Health and Safety	1	1	0	18		* Apply occupational Health and Safety Practices	* Practicing occupational health and safety
CT 112 National Building Code	2	2	0	36		* Implement National Building Code	* Implementing National Building Code
CT 113 Rough Carpentry	3	2	3	90		* Prepare/Stake-out building lines	* Staking-out Building Lines
						* Prepare construction materials	
						* Observe procedures, specifications and instructions	
						* Maintain tools and equipment	
						* Fabricate Formworks	* Fabricating formworks
						* Practice occupational health and safety	
						* Install formworks components	* Installing Formworks
						* Strip formworks components	* Stripping formworks
						* Install framing works	* Erecting post/column
							* Installing wall frames
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	(2)	2	None	36	None		
Total	24	23.5	4.5	504			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
CT 121: Rebar Works	3	2	3	90		Fabricate steel reinforcement	Installing root frames
							Installing floor frames
							Fabrication steel reinforcement
						Install steel reinforcement	Installing steel reinforcement
						Observe procedures, specification and manual of instructions	
CT 122: Rough Masonry	3	2	3	90		Prepare masonry materials	Preparing masonry materials
						Perform basic masonry works	Performing Basic Masonry
						Perform mensurations and calculations	
CT 123: Elementary Surveying	3	2	3	90		Perform elementary surveying	Performing elementary surveying
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	{2}	2	None	36	None		
Total	24	23	9	576			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs - per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
CT 211: Plumbing	3	3	2	90		Prepare pipe for intallation	Preparing plumbing pipe fitting and fixtures
						Perform mensurations and calculations	
						Maintain tools and equipment	
						Make pipe joints and connections	Making pipe joints and connection
						Perform single unit plumbing installation	Installing single unit plumbing assemblies
						Perform plumbing repair and maintenance	Performing plumbing repair and maintenance
						Conduct pipe leak testing	Testing pipe leak
						Perform complex and multi-story plumbing installation	Installing multi-story plumbing system
						Install water supply system	Installing hot and cold water supply system
						Draft plumbing design	Designing plumbing installation
						Prepare masonry tools and materials	
						Observe procedures, specifications and instruction	
CT 212: Finishing Masonry	3	2	3	90	CT 122	Lay bricks / blocks	Brick laying
						Perform mensurations and calculations	Block laying
						Plaster concrete / masonry surface	Plastering concrete / masonry surfaces
						Maintain tools and equipment	
						Apply decorative concrete / masonry finishes	Applying decorative concrete / masonry finishes
						Intall pre-cast baluster and hand rail	Installing pre-cast baluster and hand rail
						Repair defective concrete / masonry surfaces	Repairing defective concrete / masonry surfaces
							Laying floor tiles

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
						Lay tiles	Laying wall tiles
							Laying roof tiles
CT 213: Finishing Carpentry	3	2	3	90		Install architectural ceiling wall sheets / panel board and floor finishes	Cladding wall
							Installing ceiling boards
							Installing floor boards / panel
						Prepare construction tools and materials	
						Observe procedures, specifications and instruction	
						Perform mensurations and calculations	
						Maintain tools and equipment	
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	24	27	8	630			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
CT 221: Construction surveying	3	2	3	90		Perform construction surveying	Performing construction surveying
CT 222: Construction Estimating	3	2	3	90		Estimate construction materials	Estimating construction materials
CT 223: Analysis of Building Structure	3	2	3	90		Analyze building structure	Analyzing building structrue
						Practice occupational Health and Safety	
CT 224: Construction Painting	3	2	3	90		Prepare painting materials, tools and equipment	Preparing painting materials
						Observe procedures, specifications and manual of instruction	Utilizing painting tools and equipment
						Prepare surface for painting	Preparing surface for painting
						Interpret technical drawings and plans	
						Perform painting works	Construction painting (applying paints)
						Observe procedures, specifications and manual of instruction	
						Estimate painting requirements	Estimating painting requirements
						Perform mensuaration and calculations	
						Mix color paint	Mixing color paints
						Retouch / repaint works	Retouching and repainting works
						Maintain tools and equipment	
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	(2)	2	None	36	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	24	25	12	666			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Ilm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
CT 311: Construction Management	3	2	3	90		Participate in work place communication	
						Manage / supervise construction process	Managing construction project
						Work in a team environment	
						Practice career professionalism	
CT 312: Soil and Construction Materials Testing	3	2	3	90		Test Soil and construction materials	Testing soil and construction materials
						Prepare testing tools and equipment	
						Maintain testing tools and equipment	
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	27	25	6	558			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Ilm 2 : Industry Immersion 2	10	None	30	540	Ilm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Civil Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Civil Technology

Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
Carpentry NC II	Occupational Health and Safety Practices	• Perform occupational health and safety practices.	First year, first semester	
	National Building Code	• Implement national building code.	First year, first semester	
	Rough Carpentry	• Prepare construction materials. • Prepare/stake-out building lines • Observe procedures, specifications and instructions. • Maintain tools and equipment • Fabricate form works • Strip form works • Install framing works	First year, first semester	

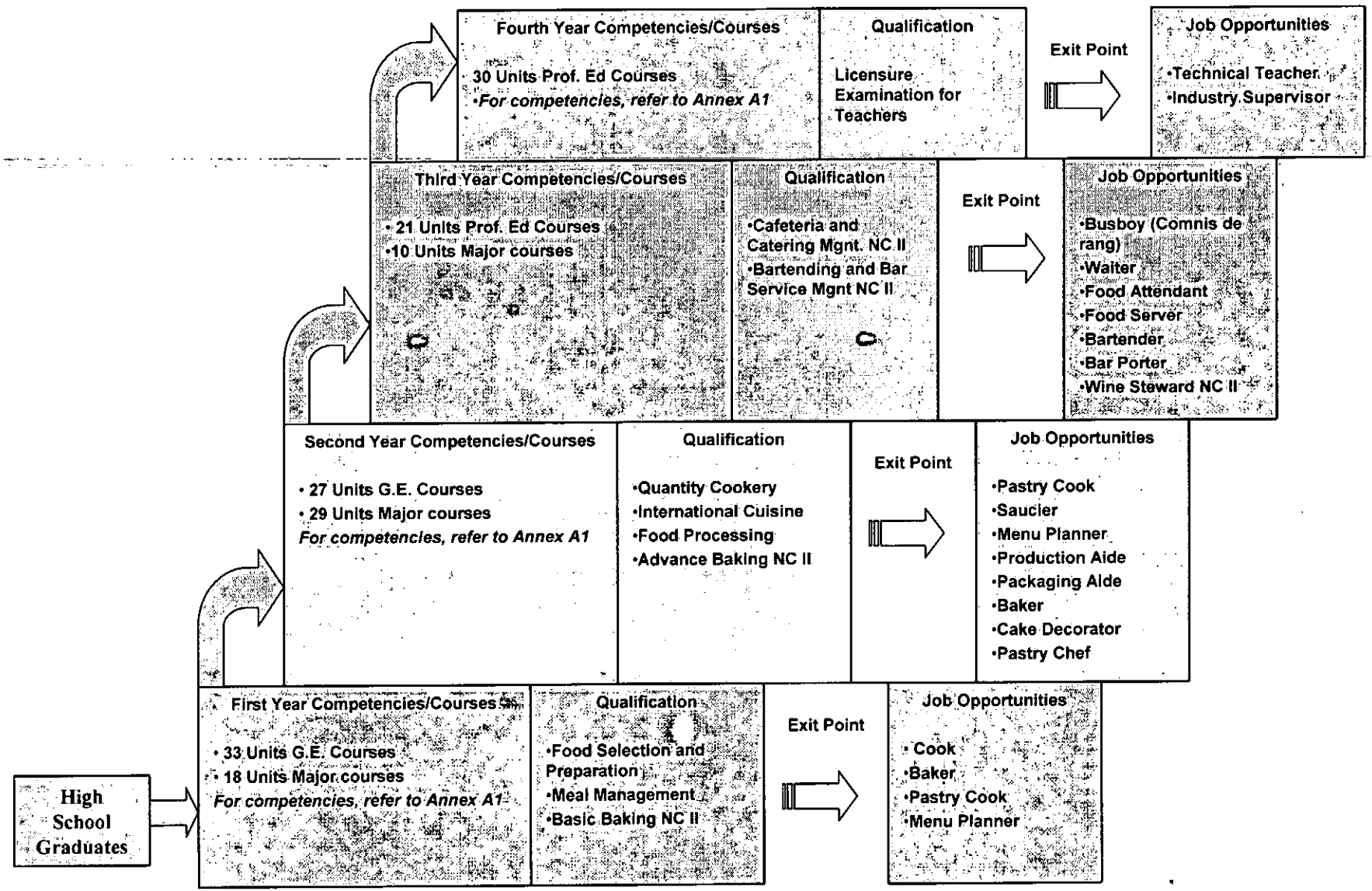
Scaffold Erection NC II	Rebar Works	• Fabricate concrete steel reinforcement. • Install steel reinforcement.	First year, second semester	
Masonry NC I	Rough Masonry	• Prepare masonry materials • Perform basic masonry works. • Perform mensurations and calculations.	First year, second semester	
	Elementary Surveying	• Perform elementary surveying.	First year, second semester	
Plumbing NC I and NC II leading to NC III	Plumbing	• Prepare pipe for installation • Perform calculations and mensuration • Maintain tools and equipment • Make pipe joints and connections • Perform single unit plumbing installation • Perform plumbing repair and maintenance • Conduct pipe leak testing • Perform complex and multi-storey plumbing installation • Install water supply system • Design plumbing installation	Second year, first semester	
Masonry NC II leading to NC III Tile Setting NC II	Finishing Masonry	• Prepare masonry tools and materials • Lay bricks/block • Plaster concrete/masonry surface • Apply decorative concrete/masonry finishes • Install pre-cast baluster and hand rail • Lay/set tiles	Second year, first semester	

Carpentry Leading to NC III	Finishing Carpentry	• Install architectural ceiling wall sheets/panel board and floor finishes • Fabricate/install door/window jambs and panel • Install stair components and/or pre-fabricated stair assembly • Install built-in/pre-fabricated cabinets	Second year, first semester	
Construction Painting NC III	Construction Surveying		Second year, second semester	
	Construction Estimating		Second year, second semester	
	Analysis of building Structures		Second year, second semester	
	Construction Painting	• Prepare tools, painting materials and equipment • Prepare surface for painting • Perform painting works • Perform mixing and paint tinting • Estimate painting requirements • Perform retouching/repainting works	Second year, second semester	
	Industry Immersion 1		Summer	

	Construction Management		Third year, first semester	
	Soil and Construction Materials Testing		Third year, first semester	
	Industry Immersion II		Third year, second semester	

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Food and Service Management



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
FSM 111: Occupational Health and Safety Practices	1	1	0	18	None	Perform occupational health and safety practices.	Practicing Occupational Health and Safety Practices
FSM 112: Food Selection and Preparation	4	2	6	108		Select, prepare and cook food.	Selecting, Preparing and Cooking Food
FSM 113: Meal Management	4	2	6	108	None	Organize and manage meal preparation.	Organizing and Managing Meal Preparation
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None		
P.E. 111 : Self-Testing Activities	(2)	2	None	36	None		
Total	27	23.5	13.5	594			

[redacted] MATRIX [redacted] THE [redacted] ER [redacted] E O [redacted] GHE [redacted] DUC [redacted] ON [redacted] RSE [redacted] ND [redacted] T C [redacted] ETE [redacted] ES [redacted]

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
FSM 121: Food Processing, Packaging and Labelling	4	2	6	144	None	Process food by salting, curing, smoking fermenting, pickling and sugar concentrate	
FSM 122: Basic Baking	5	3	6	162		Prepare pastry, cakes and yeast bread products.	Preparing pastry, cakes and yeast bread products
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	(2)	2	None	36	None		
Total	24	22	12	612			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

[redacted] MATRIX [redacted] THE [redacted] ERI [redacted] E OF [redacted] SHE [redacted] DUC [redacted] ON C [redacted] RSE [redacted] AND [redacted] T CO [redacted] ETE [redacted] ES [redacted]

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
FSM 211: Advance Baking	5	3	6	162	None	Prepare bakery products.	Preparing Bakery Products
FSM 212 International Cuisine	5	3	6	162	None	Prepare, cook and serve; appetizers and salad; stock, sauces and soups; and food menu	
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	25	26	12	684			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

[redacted] [redacted] [redacted] [redacted] [redacted] MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES [redacted] [redacted] [redacted] [redacted]

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
FSM 221: Cafeteria and Catering Management	5	3	3	108	None	Prepare, cook and serve; appetizers and salad; stock, sauces and soups; and food menus	Preparing, cook and serve; appetizers and salad; stock, sauces and soups; and food menus
FSM 222: Quantity Cookery	4	3	3	108	None	Receive and store kitchen supplies	Receiving and storing kitchen supplies
FSM 223: Bartending and Bar Set-up	4	3	3	108	None	Clean bar areas, Operate bar, Prepare and mix cocktail, Provide wine service	
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	25	23	9	630			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

[redacted]TRIX[redacted] THE[redacted]ER[redacted]E O[redacted]GHE[redacted]DUC[redacted]ON [redacted]RS[redacted]ND[redacted]T C[redacted]ET[redacted]ES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	21	21	0	378			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

[redacted]RIX [redacted] THE[redacted]ER[redacted] OF[redacted]HE[redacted]UC[redacted]N [redacted]RSE[redacted]ND [redacted] C[redacted]ETE[redacted]ES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Food and Service Management

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)

Major: Food and Service Management

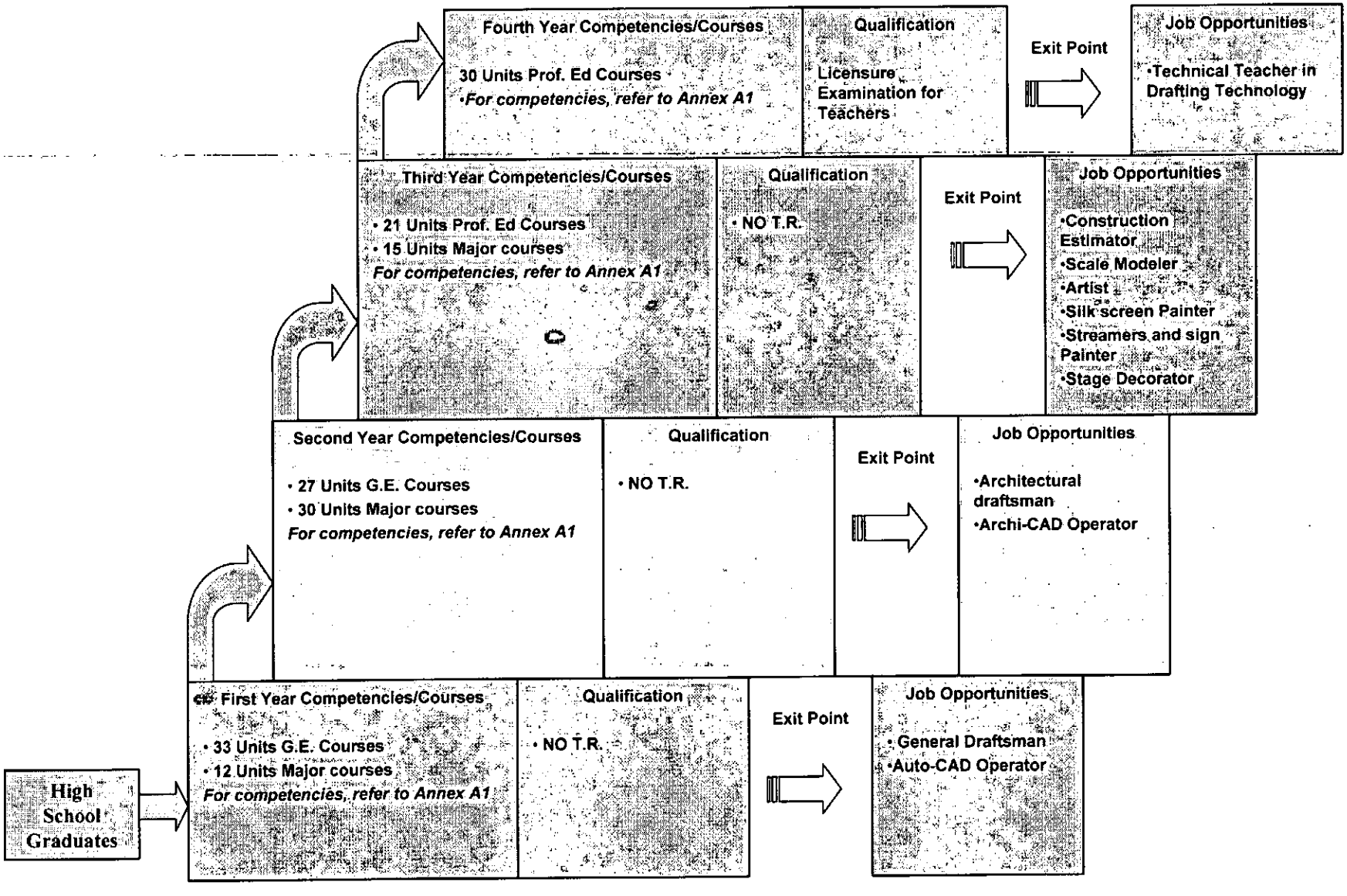
Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
NC I	Food Selection and Preparation	• Select, prepare and cook food.	First year, first semester	
NC I	Basic Baking	• Prepare and bake pastry, cookies, pie, cakes and yeast bread products.	First year, second semester	
NC II	Meal Management	• Organize and manage meal preparation.	First year, second semester	
NC II	Food Processing, packaging and labeling	• Processed food by salting, curing, smoking fermenting, pickling and sugar concentrate. • Package processed food. • Prepare bakery products.	First year, second semester	
NC II	Advanced Baking	• Bake torta, gateau, and petite four. • Apply icing and frosting on baked products.	Second year, first semester	
NC II	International Cuisine	• Prepare, cook and serve; appetizers and salad; stock, sauces and soups; and food menus. • Practice career professionalism	Second year, first semester	

NC II	Cafeteria and Catering Management	• Provide effective customer service. • Provide food and beverage services. • Develop and update food and beverage knowledge.	Second year, second semester	
NC II	Quantity Cookery	• Receive and store kitchen supplies. • Prepare and portion controlled meat cuts.	Second year, second semester	
NC II	Bartending and Bar Set-up	• Perform computer operation. • Clean bar areas. • Operate bar. • Prepare and mix cocktail. • Provide wine services.	Second year, second semester	

Form 1

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Drafting Technology



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
DT 111 : Occupational Health and Safety Practices	1	1	None	18	None	* Perform occupational health and safety practices.	* Performing occupational health and safety practices
DT 112 : Drafting Fundamentals and Theory of Design	3	1	6	126	None	* Draw pictorial drawing	* Drawing pictorials
						* Prepare freehand lettering	* Preparing freehand lettering
						* Draw freehand sketching	* Drawing freehand sketching
						* Draw orthographic projection	* Drawing orthographic projection
						* Prepare and interpret working drawings	* Preparing and interpreting working drawing
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	* Interpret technical drawing and plans	* Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	22	20.5	7.5	504			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
DT 121 : Basic Auto-CAD 2-D Application	4	2	6	144	None	* Operate computer using Auto-CAD	* Operating computer using Auto-CAD software
						* Begin to draw view modification	* Beginning to draw view modification
						* Create geometrical entities	* Creating geographical entities
						* Draw 2-D drawings	* Drawing 2-D drawings
DT 122 : Machine Drafting Using Auto-CAD	4	2	6	144	Basic Auto-CAD 2-D Application	* Prepare machine drawings	* Preparing machine drawings
						* Place proper dimensions and notes	* Placing dimensions and notes
						* Place complete specifications	* Placing specifications
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	{2}	2	None	36	None		
Total	23	21	12	594			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
DT 211 : Auto-CAD 2-D and 3-D Application	5	3	6	153	Machine drafting using Auto-CAD	* Prepare detail drawings	* Preparing working drawings
						* Prepare working drawings using Auto-CAD	* Preparing working drawings
						* Draw pictorials in 3-D drawings	* Drawing pictorial in 3-D
DT 212 Architectural Drafting and Design	5	3	6	153	Auto-CAD 2-D and 3-D Application	* Design residential, commercial and educational structure	* Designing residential commercial and educational structure
						* Draw residential, commercial and educational plan.	* Drawing plans of a residential, commercial and educational structure
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	25	26	12	666			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
DT 221 : Building Technology and Utilities	5	3	6	153	Architectural Drafting and Design	* Design structures of a residential building.	* Designing residential structures
						* Apply architectural theories on space articulatoin and geometry, economics and human factors in the design.	* Applying architectural theories on space articulation and geometry, economics and human factors in the design.
						* Integrate context, enclose and system posting, architectual safety and socio-cultural variables.	Integrates context, enclose and system costing, architectural safety and socio-cultural variables
DT 222 : CAD Architectural Design	5	3	6	133	Architectural Drafting and Design	* Prepare a complete plan of a two-storey residential house using Auto-CAD.	* Preparing a complete plan of a two-storey residential house using Auto-CAD.
						* Prepare the pictorial drawing in 3-D.	Prepare the pictorial drawing in 3-D
DT 223 : Construction Estimates and Scale Modeling	5	3	6	133	CAD Architectural Design	* Perform construction estimates.	* Performing construction estimates.
						* Prepare bill of materials.	* Preparing bill of materials
						* Construct scale model.	* Constructing scale model
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	27	26	18	725			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per wk**	**Lab hrs per wk**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Ilm 1: Industry Immersion 1	5	0	30	270	DT 111, 112, 121, 122. 211. 212		
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
DT 311 : Graphics/Commercial Arts with Computer Application	5	3	6	133	All Drafting Courses	* Perform artworks and design using computer	* Using computer in designing artworks
						* Perform photographic silk screen printing	* Performing photographic silk screen printing
						* Perform stage decoration	* Performing stage decoration
						* Paint streamers and signboards	* Painting streamers and signboards
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	26	24	6	511			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
IIm 2 : Industry Immersion 2	10	0	30	540	IIm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54	None	* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54	None	* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54	None	* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54	None	* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Drafting Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	0	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Drafting Technology

Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
NO TR	Occupational Health and Safety Practices	• Perform occupational health and safety practices	First year, First semester	
	Drafting Fundamentals and Theory of Design	• Draw Pictorial Drawing	First year, First semester	
NO TR	Basic Auto-CAD 2-D Application	• Operate Computer using Auto-CAD • Begin to draw view modification • Create geometrical entities • Draw 2-D Drawings	First year, second semester	
	Machine Drafting Using Auto-CAD	• Prepare machine drawings • Place complete specifications • Place proper dimensions and notes	First year, second semester	
NO TR	Auto-CAD 2-D and 3-D Application	• Prepare detail drawings • Prepare working drawings using Auto-CAD • Draw Pictorials in 3-D drawings	Second year, first semester	
NO TR	Architectural Drafting and Design	• Design residential, commercial and educational structure • Draw residential, commercial and educational plan	Second year, first semester	

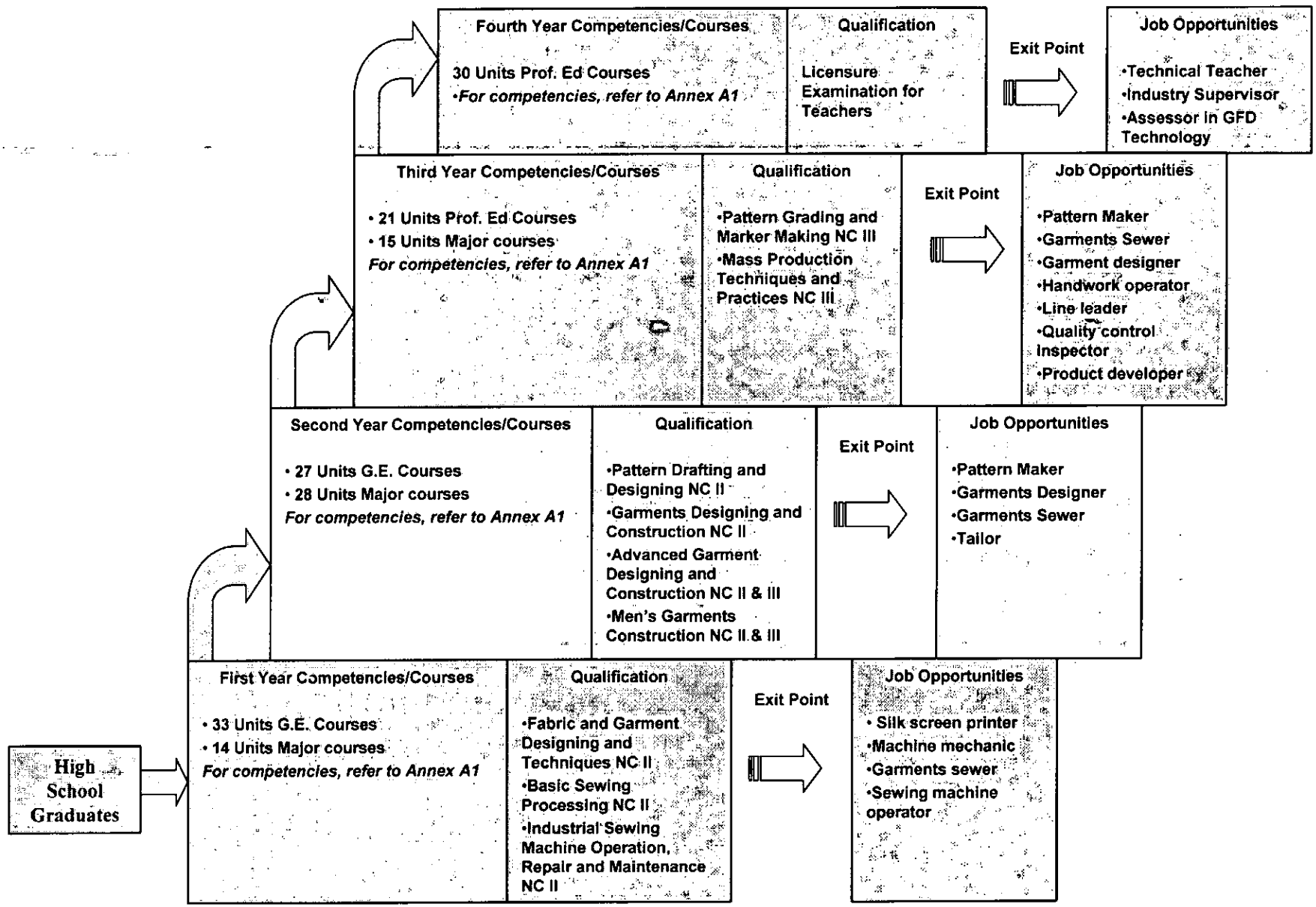
NO TR	Design Structures of a Residential Building	• Design structures of a residential building • Apply architectural theories on space articulation and geometry, economics and human factors in the design • Integrate context, enclose and system posting, architectural safety and socio-cultural variables	Second year, second semester	
	CAD Architectural Design	• Prepare a complete plan of a two-storey residential house using auto-CAD • Prepare the pictorial drawing in 3-D	Second year, second semester	
	Construction Estimates and Scale Modeling	• Perform construction estimates • Prepare bill of materials • Construct scale model	Second year, second semester	
	Graphics/Commercial Arts with Computer Application	• Perform Artworks and Design using Computer • Perform Photographic silk screen printing • Perform stage decoration • Paint streamers and signboards	Third year, first semester	

Dressmaking NC III	Mass Production Techniques and Practices	• Measure and calculate workplace data • Apply company technical quality standard • Apply quality standards • Trim excess touches • Press finished garments • Package finished garments	Third year, first semester	
Dressmaking NC III	Pattern Grading and Marker Making	• Apply company technical quality standards • Grade patterns • Make manual markers	Third year, first semester	

Form 1

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Garments, Fashion and Design



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
GFD 111: Occupational Health and Safety Practices	1	1	0	18		Perform occupational health and safety practices	Performing Occupational Health and Safety Practices
GFD 112: Personality Development	2	2	0	36		Practice personality development	Practicing Personality Development
GFD 113: Fabric and Garment Designing Techniques	3	2	3	90		Plan Garment Designs; Print design on Fabrics	Performing Fabric and Garment Designing techniques
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawing and plans
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	24	23.5	4.5	504			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
GFD 121: Basic Sewing Processes	4	2	6	144		Make Fashion jewelries; Perform handsewing	Performing Basic Handsewing Processes
GFD 122: Industrial Sewing Machine Operation, Repair and Maintenance	4	2	6	144		Set up and operate machines/s; Perform basic maintenance; Prepare sewing machine for operation; Troubleshoot simple machine problems	Operating, Repairing and Maintaining Industrial Sewing Machines
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Match 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	{2}	2	None	36	None		
Total	23	21	12	594			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
GFD 211: Pattern Drafting and Designing	4	2	6	144		Carry out measurements and calculations; Take client's body measurements; Draft basic/block pattern; Manipulate pattern; Cut final pattern	Drafting and Designing Patterns
GFD 212: Garments Designing and Construction	5	3	6	162		Prepare materials; Layout and mark patterns on materials; Cut material	Designing and Constructing Garments
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	24	25	12	666			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
GFD 221: Men's Garments Construction	5	3	6	162		Apply quality standards; Draft and cut patterns; Prepare cut parts; sew men's wear	Constructing Men's Garments
GFD 222: Advanced Garment Designing and Construction	5	3	6	162		Apply quality standards; sew and assemble garments parts and aleter completed garments	Applying quality standards sewing and assembling garments parts and alter completed garments
GFD 223: Pattern Grading and Marker Making	4	2	6	144	None	Apply company technical quality standards; Grade patterns; Make manual markers	Grading Patterns and Making Markers
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None	Participate in workplace communication	Participating in workplace communication
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	( )	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	( )	3	None	54	None		
Total	26	25	18	774			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
lim 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
GFD 311: Mass Production Techniques and Practices	5	3	6	162		Measure and calculate workplace data; Apply company technical quality standard; Apply quality standards; Apply finishing touches; Trim excess threads; Press finished garments; Package finished garments	Perform mass production techniques and practices
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	26	24	6	540			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Iim 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Garments, Fashion and Design Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

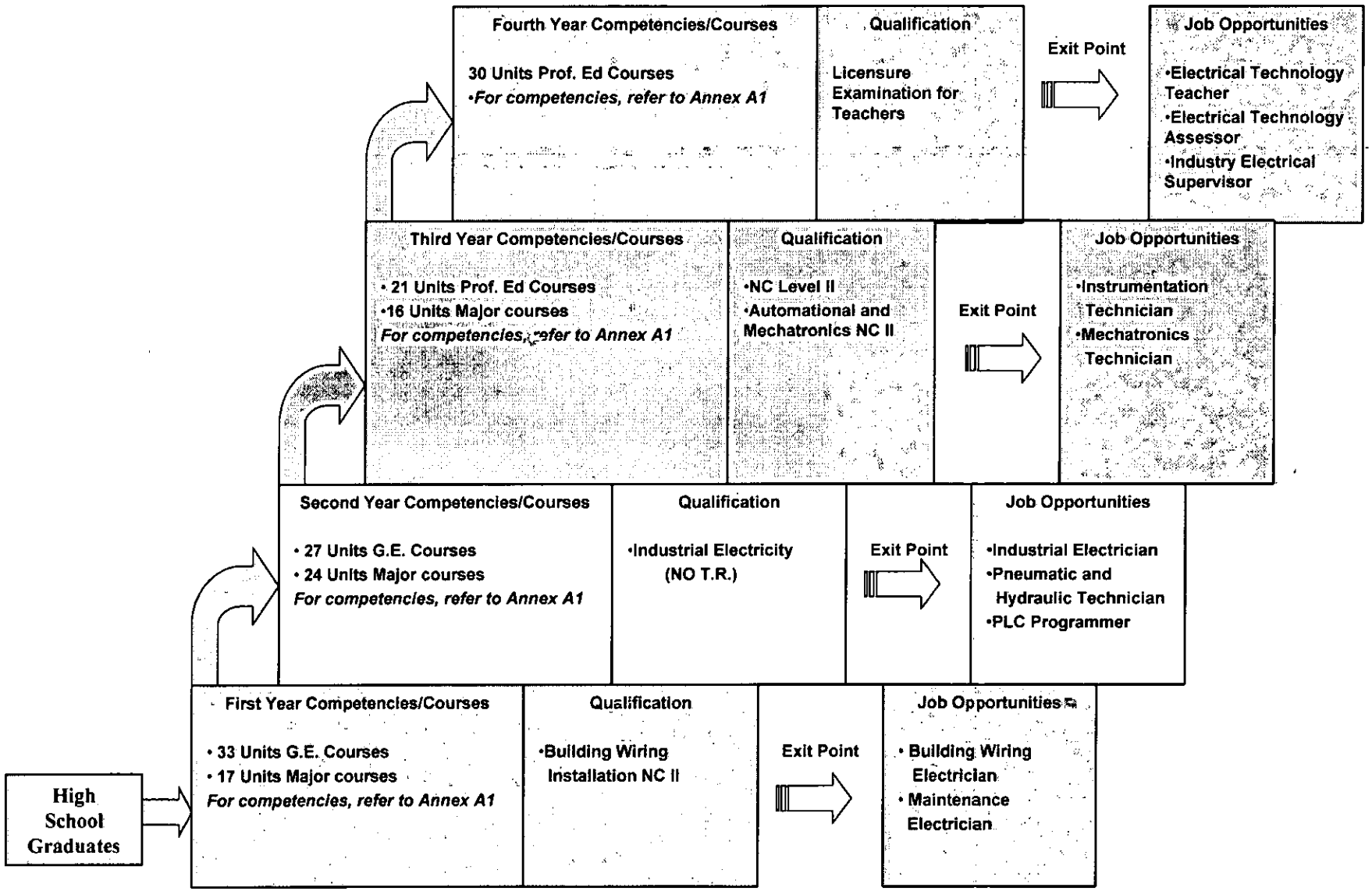
LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Garments, Fashion and Design Technology

Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
Dressmaking NC II	Occupational Health and Safety Practices	• Perform occupational health and safety practices	First year, First semester	
NO TR	Personality Development	• Practice personality development	First year, First semester	
Dressmaking NC II	Fabric and Garment Designing Techniques	• Plan Garment Designs • Print design on Fabrics	First year, First semester	
Dressmaking NC II	Basic Sewing Processes	• Make Fashion jewelries • Perform hand sewing	First year, second semester	
Dressmaking NC II	Industrial Sewing Machine Operation, Repair and Maintenance	• Set-up and operate machines • Perform basic maintenance • Prepare sewing machine for operation • Troubleshoot simple machine problems	First year, second semester	

Dressmaking NC III	Pattern Grading and Marker Making	• Apply company technical quality standards • Grade patterns • Make manual markers	Third year, first semester	

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major Electrical Technology



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
ET 111 : Occupational Health and Safety Practices	1	1	None	18	None	* Perform Occupational Health and Safety Practices	Performing occupational health and safety practices
ET 112 : Fundamentals of Electricity	3	1	6	126	None	* Prepare electrical power and hydraulic tools	* Preparing electrical power and hydraulic tools
						* Prepare electrical materials and tools	* Preparing electrical materials and tools
						* Observe procedures and specifications	* Observing procedures and specifications
						* Install electrical lighting systems on auxiliary outlets and lighting fixtures	* Installing electrical lighting systems on auxiliary outlets and lighting fixtures
						* Interpret technical drawings and plans	* Interpreting technical drawings and plans
						* Maintain tools and equipment	* Maintaining tools and equipments
						* Perform mensurement and calculations	* Performing mensurations and calculations
ET 113 : Electrical and Electronics Circuit and Devices	3	1	6	126	None	* Install electrical and electronics devices	* Installing electrical and electronics devices
						* Observe procedures and specifications	* Observing procedures and specifications
						* Interpret technical drawings and plans	* Interpreting technical drawings and plans
						* Maintain tools and equipment	* Maintaining tools and equipments
						* Perform mensurations and calculations	* Performing mensurations and calculations

"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	25	21.5	13.5	630			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
ET 121 : Electrical Wiring System and Design	4	2	6	154	ET 112	* Install wiring devices for floor and ground-fault current interrupting outlets	* Installing wiring devices for floor and ground-fault current interpreting outlets.
						* Install electrical protection system for lighting and grounding	* Installing electrical protection system for lighting and grounding
						* Prepare electrical materials and tools	* Installing electrical wiring system
						* Observe procedures and specifications	* Installing building wiring on auxiliary outlet and lighting fixtures
						* Interpret technical drawings and plans	
						Perform mensuration and calculations	
ET 122 : Signal and Communication System	3	2	3	90	ET 112	* Perform roughing-in activities for communication and distribution system	* Installing communication and distribution systems
						* Install communication, signaling devices and remote control systems on auxiliary equipment	
						* Prepare electrical materials and tools	
						* Observe procedures, specifications	
						* Maintain tools and equipment	
						* Perform mensurations and calculations	
						* Interpret technical drawings and plans	
						* Commission installed electrical systems	
ET 123 : Industrial Motor Controller	3	2	3	90	ET 112	* Design motor control system	* Designing motor control system
						* Prepare electrical materials and tools	
						* Observe procedures, specifications	
						* Interpret technical drawings and plans	
						* Maintain tools and equipment	

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
						* Perform mensurations and calculations	
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	(2)	2	None	36	None		
Total	25	23	12	640			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
ET 211 : DC Machine	3	2	3	90	None	* Service and repair DC machine	* Repairing DC machine
						* Prepare electrical materials and tools	
						* Observe procedures and specifications	
						* Interpret diagrams	
						* Maintain tools and equipment	
ET 212 AC Machine	4	2	6	144	None	* Service and repair AC machine	* Repairing AC machine
						* Prepare electrical materials and tools	
						* Observe procedures, specifications	
						* Interpret diagrams	
						* Maintain tools and equipment	
ET 213 Logic Circuit Controller	3	2	3	90	None	* Service and repair logic controller	* Designing logic controller
						* Prepare electrical materials and tools	
						* Observe procedures, specifications	
						* Interpret diagrams	
						* Maintain tools and equipment	
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	25	26	12	684			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
ET 221 : Industrial Electronics Circuits and Devices	3	2	3	90	None	* Service and repair solid state motor controller	* Designing solid state controller
						* Prepare electrical materials and tools	
						* Observe procedures, specifications	
						* Interpret diagram	
						* Maintain tools and equipment	
ET 222 : Pneumatic and Hydraulic Application	3	2	3	90	None	* Service and repair pneumatic controller	* Designing pneumatic controller
						* Prepare electrical materials and tools	
						* Interpret diagram	
						* Maintain tools and equipment	
						* Service and repair hydraulic controller	* Designing hydraulic controller
						* Observe procedures, specifications	
						* Interpret diagram	
ET 223 : PLC System and Programming	3	1	6	126	ET 123	* Program PLC Controller	* Programming PLC controller
						* Service and repair PLC controller	
						* Observe procedures, specifications	
						* Interpret diagram	
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	21	22	12	612			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 1 : Industry Immersion 1	5	None	30	270		* Refer to competencies of ET 111, 112, 113, 122, 123, 211, 212, 213	* Refer to Modules of ET 111, 112, 113, 122, 123, 211, 212, 213
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
ET 311 : Industrial Process Controller	3	2	3	90	None	* Configure instrumentation and control devices	* Configuring instrumentation and control devices
						* Maintain and repair instrumentation and control devices	* Repairing instrumentation and control devices
						* Commission instrumentation and control system	* Installing instrumentation and conrol devices
ET 312 : Automation Control System	3	2	3	90	None	* Install mechatronics devices	* Installing mechatronics devices
						* Diagnose and troubleshoot mechatronics system	* Servicing mechatronics system
						* Interpret diagram	
						* Observe procedures, specifications	
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	27	25	6	558			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1	Refer to competencies of ET 211, 212	
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electrical Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Electrical Technology

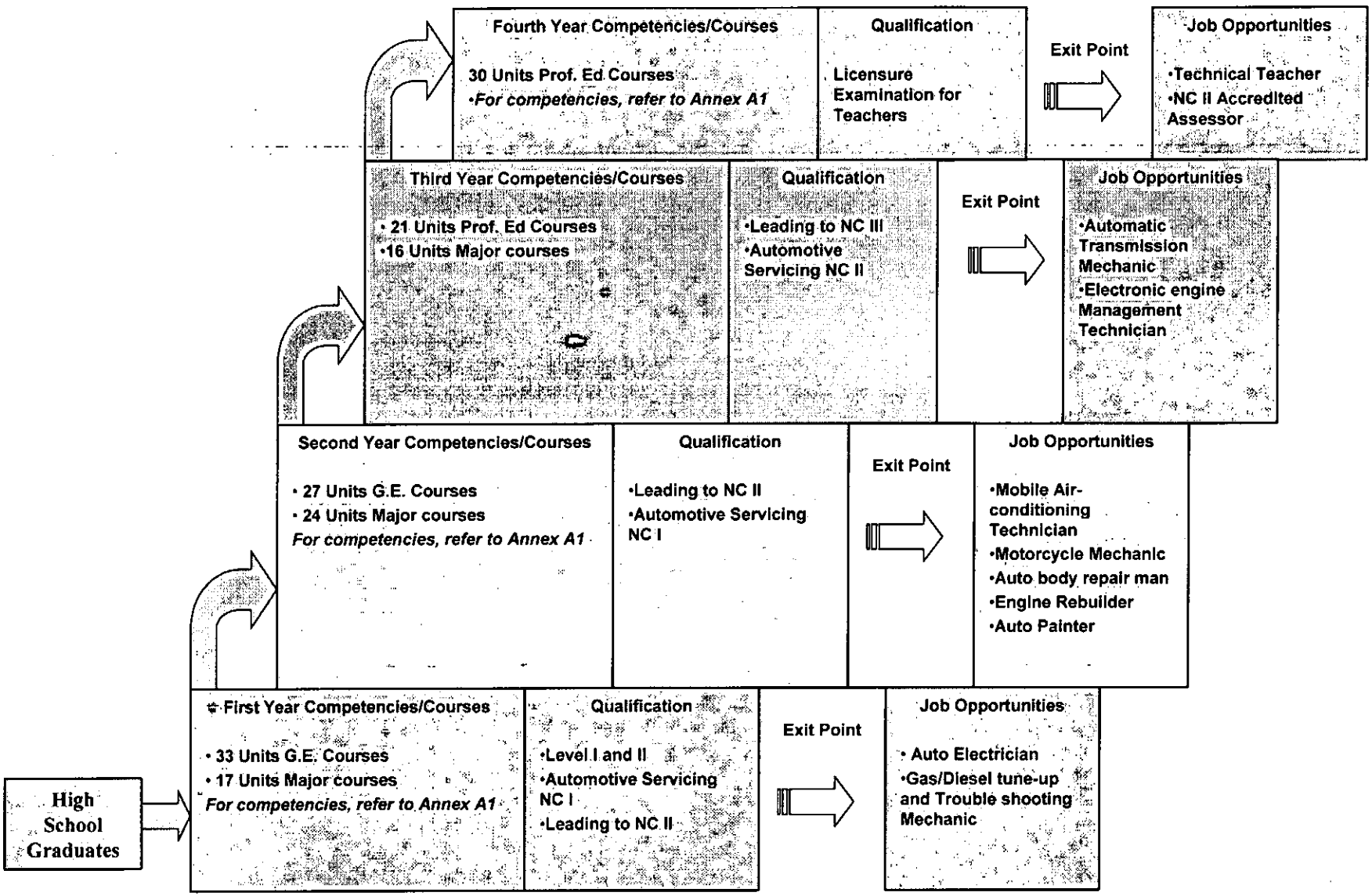
Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
Building Wiring Installation NC II	Occupational Health and Safety Practices	• Perform occupational health and safety practices.	First year, first semester	
	Fundamentals of Electricity	• Prepare electrical materials and tools. • Prepare electrical power and hydraulic tools. • Observe procedures and specifications. • Install electrical lighting systems on auxiliary outlets and lighting fixtures. • Interpret technical drawings and plans. • Maintain tools and equipment. • Perform mensurations and calculations.	First year, first semester	
	Electrical and Electronics Circuit and Devices	• Install electrical and electronics devices. • Observe procedures and specifications. • Interpret technical drawings and plans. • Maintain tools and equipment. • Perform mensurations and calculations.	First year, first semester	

	Electrical Wiring System and Design	• Prepare electrical materials and tools. • Install wiring devices for floor and ground – fault current interrupting outlets. • Install electrical system for lighting and grounding. • Observe procedures and specifications. • Interpret technical drawings and plans. • Maintain tools and equipment. • Perform mensurations and calculations.	First year, second semester	
	Signal and Communication System	• Perform roughing-in activities for communication and distribution system. • Install communication, signaling devices and remote control systems on auxiliary equipment. • Prepare electrical materials and tools. • Observe procedures and specifications. • Maintain tools and equipment. • Perform mensurations and calculations. • Interpret technical drawings and plans. • Commission installed electrical system II.	First year, second semester	
Automation and Mechatronics NC II	PLC System and Programming	• Program PLC controller. • Service and repair PLC controller. • Observe procedures and specifications. • Interpret diagrams.	Second year, second semester	
	Industrial Process Controller	• Configure instrumentation and control devices. • Maintain and repair instrumentation and control devices. • Commission instrumentation and control system.	Second year, second semester	

	Industrial Process Controller	• Install Mechatronics devices. • Program automation control system. • Diagnose and troubleshoot mechatronics system. • Interpret diagram. • Observe procedures and specifications	Second year, second semester	

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Automotive Technology



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
AT 111: Occupational Health and Safety Practices	1	1	0	18	None	Perform occupational health and safety practices.	Practicing Occupational Health and Safety Practices
AT 112: Internal Combustion Engine Servicing, Repair and Maintenance	4	2	6	144	None	Service, repair and maintain internal combustion engine	Servicing, repairing and maintaining internal combustion engine
AT 113: Preventive Maintenance and Gas/Diesel Engine Tune-up	3	2	3	90	None	Perform diesel engine tune-up	Performing diesel engine tune-up
						Perform gas engine tun-up	Performing gas engine tune-up
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	(2)	2	None	36	None		
Total	26	23.5	10.5	612			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
AT 121: Automotive Body Electrical System Service, Repair and Maintenance	5	3	6	162	None	Service, repair and maintain automotive body electrical system	Servicing, repairing and maintaining automotive body electrical system
						Service automotive battery	Servicing automotive battery
						Service ignition system'	Servicing ignition system'
						Test and repair wiring/lighting syste	Testing and repairing wiring/lighting syste
						Service starting system	Servicing starting system
						Service charging system	Servicing charging system
AT 122: Underchassis Components Servicing, Repairing and Maintenance	4	2	6	144	None	Service clutch system	Servicing, repairing and maintaining underchassis components
						Service differential and front axle	Servicing differntial and front axle
						Service manual steering system	Servicing manual steering system
						Overhaul manual transmission	Pulling out, dismantling and checking manual transmission
							Assembling and testing manual transmission
						Service brake system	Servicing brake system
							Overhauling brake system
						Service suspension system	Servicing suspension system
AT 123: Automotive Service Shop Management and Maintenance	1	1	None	18	None	Manage automotive service shop	Managing automotive service shop
						Perform auto shop maintenance	Performing auto shop maintenance
Eng 121 : Oral Communication	3	3	None	54	None	*Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	{2}	2	None	36	None		
Total	25	23	12	630			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
AT 211: Automotive Air-Conditioning System Servicing Repair and Maintenance	2	1	3	72	None	Service, repair and maintain automotive air-conditioning system	Servicing, repairing and maintaining automotive air-conditioning system
						Perform maintenance service check-up and repair to air-conditioning system	Performing maintenance service check-up and repair to air-conditioning system
						Install auto air-conditioning system	Installing auto air-conditioning system
AT 212: Motor Cycle and Small Engine Servicing, Repairing and Maintenance	2	1	3	72	None	Service, repair and maintain motorcycle and small engine	Servicing, repairing and maintaining motor cycle and small engine
						Perform periodic maintenance	Performing periodic maintenance
						Service fuel system	Servicing fuel system
						Service lubrication system	Servicing lubrication system
						Service ignition system	Servicing ignition system
						Service exhaust system	Servicing exhaust system
						Service suspension system	Servicing suspension system
						Service brake system	Servicing brake system
						Service wheels and tires	Servicing wheels and tires
						Service clutch system	Servicing clutch system
						Service electrical system	Servicing electrical system
						Service final drive	Servicing final drive
						Service cooling system	Servicing cooling system
						Overhaul motorcycle/small engine	Overhauingl motorcycle/small engine
AT 213: Automotive Body Repair and Substrate Preparation	5	3	6	162	None	Repair automotive body	Repairing automotive body

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
						Prepare substrate	Preparing substrate
						Prepare vehicle body for repair	Preparing vehicle body for repair
						Repair body panel	Repairing body panel
						Replace damaged parts with pre-fabricated parts	Replacing damaged parts with pre-fabricated parts
						Assess automotive paint jobs	Assessing automotive paint jobs
						Prepare undamaged surface for painting	Prepariing undamaged surface for painting
						Prepare damaged surface for painting	Preparing damaged surface for painting
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	24	25	12	666			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
AT 221: Engine Overhauling and Rebuilding	5	3	6	162	None	Overhaul and rebuild engine	Overhauling and rebuild engine
						Overhaul engine and associated components	Overhauling engine and associated components
						Service engine mechanical	Servicing cooling system
							Servicing lubricating system
							Servicing gasoline fuel system
							Servicing air induction system
							Servicing diesel fuel injector
AT 222: Metallic and Solid Color Painting Applications and Techniques	3	2	3	90	None	Apply techniques of metallic and solid color painting	Applying techniques of metallic and solid color painting
						Assess automotive paint jobs	Assessing automotive paint jobs
						Prepare undamaged surface for painting	Preparing undamaged surface for painting
						Prepare damaged surface for painting	Preparing damaged surface for painting
						Apply and remove masking	Applying and remove masking
						Perform solid/metallic color mixing	Performing solid/metallic color mixing
						Spray solid color paints	Spraying solid color paints
						Spray metallic color paints	Spraying metallic color paints
						Repair solid color paints	Repairing solid color paints
						Repair metallic color paints	Repairing metallic color paints
						Perform polishing	Performing polishing
AT 223: Basic Driving	2	1	3	72	None	Basic driving	Basic driving

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
						Perform minor maintenance and servicing on vehicles classified under LTO restriction Code 3 up to 8	Performing minor maintenance and servicing on vehicles classified under LTO restriction Code 3 up to 8
						Perform pre and post operation procedures on vehicles classified under LTO restriction Codes 3 up to 8	Performing pre and post operation procedures on vehicles classified under LTO restriction Codes 3 up to 8
						Obey and observe traffic rules and regulations	Obeying and observing traffic rules and regulations
						Implement and coordinate accident emergency procedures	Implementing and coordinate accident emergency procedures
						Drive light vehicle	Driving light vehicle
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None	Participate in workplace communication	Participating in workplace communication
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	22	18	12	630			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
IIm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
AT 311: Basic Power Conversion System Service, Repair and Maintenance	3	2	3	90		Service, repair and maintain basic power conversion system	Servicing, repair and maintain basic power conversion system
						Service automatic transmission	Servicing automatic transmission
							Pulling out, disassembling, and checking automatic transmission
							Assembling and testing automatic transmission
						Service power steering	Servicing power steering
AT 312: Basic Electronics Engine Management System Operation and Servicing	3	2	3	90		Operate and service basic electronic engine management system	Operating and servicing basic electronic engine management system
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	27	21	0	378			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Automotive Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 421 : Practice Teaching	6	24	None	360			
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Automotive Technology

Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
Auto service Technician I	Occupational health and Safety Practices.	• Perform occupational health safety.	First year, first semester	
(NC Level 1)	Internal combustion engine	• Service, repair and maintain internal combustion engine. • Apply appropriate sealant adhesive. • Move and position vehicle. • Read/interpret and apply specifications and manual. • Use and apply lubricant and coolant. • Interpret technical manual of specifications of engine components.	First year, first semester	
	Preventive Maintenance and Gas/Diesel Tune-up	• Perform diesel engine tune-up. • Perform gas engine tune-up.	First year, first semester	

	Automotive body Electrical System Service, Repair and Maintenance	• Service, repair and maintain automotive body electrical system. • Service automotive battery. • Service ignition system. • Test and repair wiring/lighting system. • Service starting system. • Service charging system. • Service clutch system. • Service differential and front axle. • Service manual steering system. • Overhaul manual transmission. • Service brake system. • Service suspension. • Manage automotive service shop soups . • Perform Service shop maintenance.	First year, second semester	
	Underchassis chassis components Servicing, Repairing and Maintenance	• Service clutch system. • Service differential and front axle. • Service manual steering system. • Overhaul manual transmission. • Service brake system. • Service suspension system.	First year, second semester	
	Automotive Service Shop Management and Maintenance	• Manage automotive service shop. • Perform Service shop maintenance.	First year, second semester	

Auto Service Technician II (NC Level 2)	Automotive Air-conditioning system Servicing, Repair and maintenance	• Service, repair and maintain automotive air-conditioning system • Perform maintenance service check-up and repair to air-conditioning system. • Install auto air-conditioning system • Service and repair air-con compressor and associated components.	Second year, first semester	
	Motorcycle and Small engine Servicing and Repair	• Service,repair and maintain motorcycle and small engine • Perform periodic Maintenance • Service fuel system • Service ignition system • Service Exhaust system • Service suspension system • Service Brake System • Service wheels and Tires • Service clutch system • Service electrical system • Service final Drive • Service cooling system • Overhaul motorcycle and small engine.	Second year, first semester	
	Automotive repair and substrate preparation	• Repair automotive body • Prepare substrate • Prepare vehicle body for repair.	Second year, first semester	

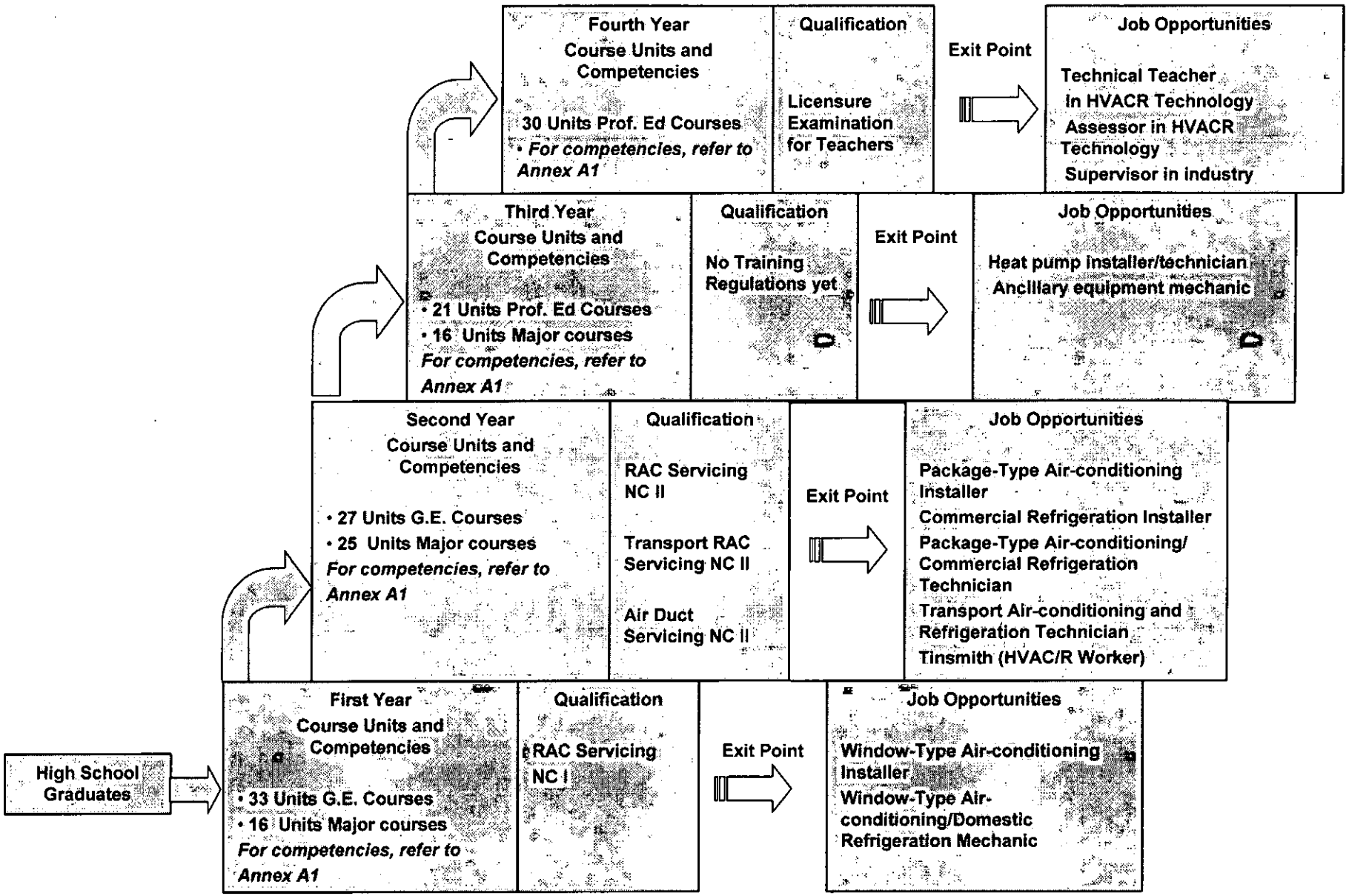
		• Repair body panel • Replace damaged parts with pre fabricated parts. • Assess automotive paint jobs. • Prepare undamaged surface for painting • Prepare damaged surface for painting		
	Engine Overhauling and Rebuilding	• Overhaul and rebuild engine • Overhaul engine and associated components • Service engine mechanical • Disassemble engine subassemblies/cylinder heads and check components. • Carry out pre repair operation on engine components • Inspect engine components and determine prepared repair action. • Carry out machining operations • Set, operate and monitor specialized machines. • Use and maintain Measuring instruments • Assemble engines/cylinder heads, check tolerances and carryout relevant testing procedures. • Assemble engine block and sub assemblies, check tolerance and carryout relevant testing procedure. • Assemble engine block and sub assemblies, check tolerances and carryout relevant procedures.	Second year, second semester	

	Metallic And solid Color Painting Applications and Techniques	• Apply techniques of metallic and solid color painting. • Asses automotive paint jobs. • Prepare undamaged surface for painting. • Apply and remove masking. • Perform solid /metallic color mixing. • Repair solid color paints. • Repair metallic color paints. • Perform polishing.	Second year, second semester	
	Basic Driving	• Perform maintenance and servicing on vehicles classified Under LTO restriction codes 3 up to 8. • Perform pre and post operation procedure on vehicles Classified under LTO restriction codes 3 up to 8. • Obey and observe traffic rules and regulations. • Implement and coordinate accident emergency procedure. • Drive light vehicle.	Second year, second semester	
AUTO SERVICE TECHNICIAN III (Leading to NC Level 3 &4	Basic power conversation system service repair and maintenance	• Service automatic transmission • Service power steering.	Third year, first semester	
	Basic Electronic Engine Management System operation and servicing	• Operate and service basic electronic engine management system.	Third year, first semester	

"Annex A"

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in HVACR Technology



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
HVACR 111: Occupational Health and Safety Practices	1	1	0	18		Perform occupational health and safety practices; Maintain tools and equipment; Observe procedures, specifications and manuals of instruction; Perform housekeeping practices.	Performing occupational health and safety practices
HVACR 112: Instrumentation and Control Devices	2	1	3	72		Prepare materials and tools; Maintain tools and equipment	No available Training Regulation yet
HVACR 113: Domestic Refrigeration and Air Conditioning (DOMRAC) Electrical Circuits	4	2	6	144		Prepare materials and tools; Perform basic electrical work; Maintain tools and equipment; Install window-type air-conditioning/domestic refrigeration units	Installing window-type air-conditioning/domestic refrigeration units
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	25	22.5	10.5	594			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
HVACR 121: Domestic Refrigeration and Air Conditioning (DOMRAC) Systems Service and Maintenance	5	3	6	162		Prepare materials and tools; Perform basic electrical work; Perform basic benchwork; Service and maintain window-type air-conditioning/domestic refrigeration units; Troubleshoot window-type air-conditioning/domestic refrigeration systems; Recover and recycle refrigerant in window-type air-conditioning/domestic refrigeration systems; Repair and retrofit window-type air-conditioning/domestic refrigeration systems and accessories; Perform testing and commissioning for window-type air-conditioning/domestic refrigeration systems; Maintain tools and equipment; Perform housekeeping and safety practices; Document work accomplished	Servicing and maintaining window-type air-conditioning/domestic refrigeration units; Troubleshooting window-type air-conditioning/domestic refrigeration systems; Recovering and recycling refrigerant in window-type air-conditioning/domestic refrigeration systems; Repairing and retrofitting window-type air-conditioning/domestic refrigeration systems and accessories; Performing testing and commissioning for window-type air-conditioning/domestic refrigeration systems
HVACR 122: Soldering, Welding, and Joining Operations	4	2	6	144		Perform mensuration and calculation; Perform basic benchwork; Maintain tools and equipment; Perform housekeeping and safety practices	No available TR yet
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	(2)	2	None	36	None		
Total	24	22	12	612			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
HVACR 211: Commercial Refrigeration Equipment (CRE) Installation and Maintenance	5	3	6	162	None	*Prepare materials and tools; Observe procedures, specifications and manuals of instruction; Perform mensuration and calculation; Perform basic electrical work; Perform basic benchwork;* Survey site for installation; Install CRE piping systems; Install CRE electrical systems; Install CRE; Trouble-shoot CRE systems; Recover and recycle refrigerant in CRE systems; Repair and retrofit CRE systems and its accessories; Perform start-up and commissioning for CRE systems; *Maintain tools and equipment; Perform housekeeping and safety practices; Document work accomplished*	Surveying site for installation: Installing CRE piping systems; Installing CRE electrical systems; Installing CRE; Trouble-shooting CRE systems; Recovering and recycling refrigerant in CRE systems; Repairing and retrofitting CRE systems and its accessories; Performing start-up and commissioning for CRE systems
HVACR 212: Package Air Conditioning Unit (PACU) Installation and Maintenance	4	2	6	144	None	*Prepare materials and tools; Perform mensuration and calculation; Perform basic benchwork; Perform basic electrical work;* Survey site for installation; Install PACU piping systems; Install PACU electrical systems; Install PACU; Trouble-shoot PACU systems; Recover and recycle refrigerant in PACU systems; Repair and retrofit PACU systems and its accessories; Perform start-up and commissioning for PACU systems; *Observe procedures, specifications and manuals of instruction; Perform housekeeping and safety practices; Document work accomplished*	Surveying site for installation; Installing PACU piping systems; Installing PACU electrical systems; Installing PACU; Trouble-shooting PACU systems; Recovering and recycling refrigerant in PACU systems; Repairing and retrofitting PACU systems and its accessories; Performing start-up and commissioning for PACU systems
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	24	25	12	666			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
HVACR 221: Mobile Refrigeration and Air Conditioning	4	2	6	144		Prepare materials and tools; Perform mensuration and calculation; Install transport air-conditioning and refrigeration units; Service and maintain transport air-conditioning and refrigeration units; Troubleshoot transport air-conditioning and refrigeration systems; Recover and recycle refrigerant in transport air-conditioning and refrigeration systems; Repair and retrofit transport air-conditioning and refrigeration and its accessories; Perform testing and commissioning for transport air-conditioning and refrigeration; Maintain tools and equipment; Perform housekeeping and safety practices; Document work accomplished	Installing transport air-conditioning and refrigeration units; Servicing and maintaining transport air-conditioning and refrigeration units; Troubleshooting transport air-conditioning and refrigeration systems; Recovering and recycling refrigerant in transport air-conditioning and refrigeration systems; Repairing and retrofitting transport air-conditioning and refrigeration and its accessories; Performing testing and commissioning for transport air-conditioning and refrigeration
HVACR 222: Refrigeration Plant Designing	3	2	3	90		Observe procedures, specifications and manuals of instruction; Maintain tools and equipment; Document work accomplished	
HVACR 223: Air Handling Units Installation, Service and Maintenance	4	2	6	144		Prepare materials and tools; Observe procedures, specifications and manuals of instruction; Perform mensuration and calculation; Perform basic electrical work; Perform basic benchwork; Survey site for installation; Fabricate air ducts; Install air duct system; Perform air duct testing; Insulate air ducts; Repair and maintain air duct system; Maintain tools and equipment; Document work accomplished	Surveying site for installation; Fabricating air ducts; Installing air duct system; Performing air duct testing; Insulating air ducts; Repairing and maintaining air duct system
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	23	23	15	684			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
HVACR 311: Heat Pump Operation	3	1	6	126	None	Observe procedures, specifications and manuals of instruction; Maintain tools and equipment; Perform housekeeping and safety practices; Document work accomplished	No available Training Regulation yet
HVACR 312: Ancillary Equipment Service and Repair	3	1	6	126	None	Observe procedures, specifications and manuals of instruction; Perform basic benchwork; Maintain tools and equipment; Perform housekeeping and safety practices; Document work accomplished	No available Training Regulation yet
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	27	23	12	630			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Heating, Ventilating, Air-Conditioning and Refrrigeration Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: HVAC/R TECHNOLOGY

Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
RAC Servicing NC I	Occupational Health and Safety Practices	• Perform occupational health and safety practices • Maintain tools and equipment • Observe procedures, specifications and manuals of instruction	1st year, 1st semester	
RAC Servicing NC I	Instrumentation and Control Devices	• Prepare materials and tools • Maintain tools and equipment	1st year, 1st semester	
RAC Servicing NC I	Domestic Refrigeration and Air Conditioning (DOMRAC) Electrical Circuits	• Prepare materials and tools • Perform basic electrical work • Maintain tools and equipment • Install window-type air-conditioning/domestic refrigeration units	1st year, 1st semester	
RAC Servicing NC I	Domestic Refrigeration and Air Conditioning (DOMRAC) Systems Service and Maintenance	• Prepare materials and tools • Perform basic electrical work • Perform basic benchwork • Service and maintain window-type air-conditioning/domestic refrigeration units • Troubleshoot window-type air-conditioning/domestic refrigeration systems • Recover and recycle refrigerant in window-type air-conditioning/domestic refrigeration systems • Repair and retrofit window-type air-conditioning/domestic refrigeration systems and accessories	1st year, 2nd semester	

RAC Servicing NC I	Soldering, Welding, and Joining Operations	• Perform testing and commissioning for window-type air-conditioning/domestic refrigeration systems • Maintain tools and equipment • Perform occupational health and safety practices • Document work accomplished • Perform mensuration and calculation • Perform basic benchwork • Maintain tools and equipment • Perform occupational health and safety practices	1st year, 2nd semester	
RAC Servicing NC II	Commercial Refrigeration Equipment (CRE) Installation and Maintenance	• Prepare materials and tools • Observe procedures, specifications and manuals of instruction • Perform mensuration and calculation • Perform basic electrical work • Perform basic benchwork • Survey site for installation • Install CRE piping systems • Install CRE electrical systems • Install CRE • Trouble-shoot CRE systems • Recover and recycle refrigerant in CRE systems • Repair and retrofit CRE systems and its accessories • Perform start-up and commissioning for CRE systems • Maintain tools and equipment • Perform housekeeping and safety practices • Document work accomplished	2nd year, 1st semester	
RAC Servicing NC II	Package Air Conditioning Unit (PACU) Installation and Maintenance	• Prepare materials and tools • Perform mensuration and calculation • Perform basic benchwork • Perform basic electrical work • Survey site for installation • Install PACU piping systems	2nd year, 1st semester	

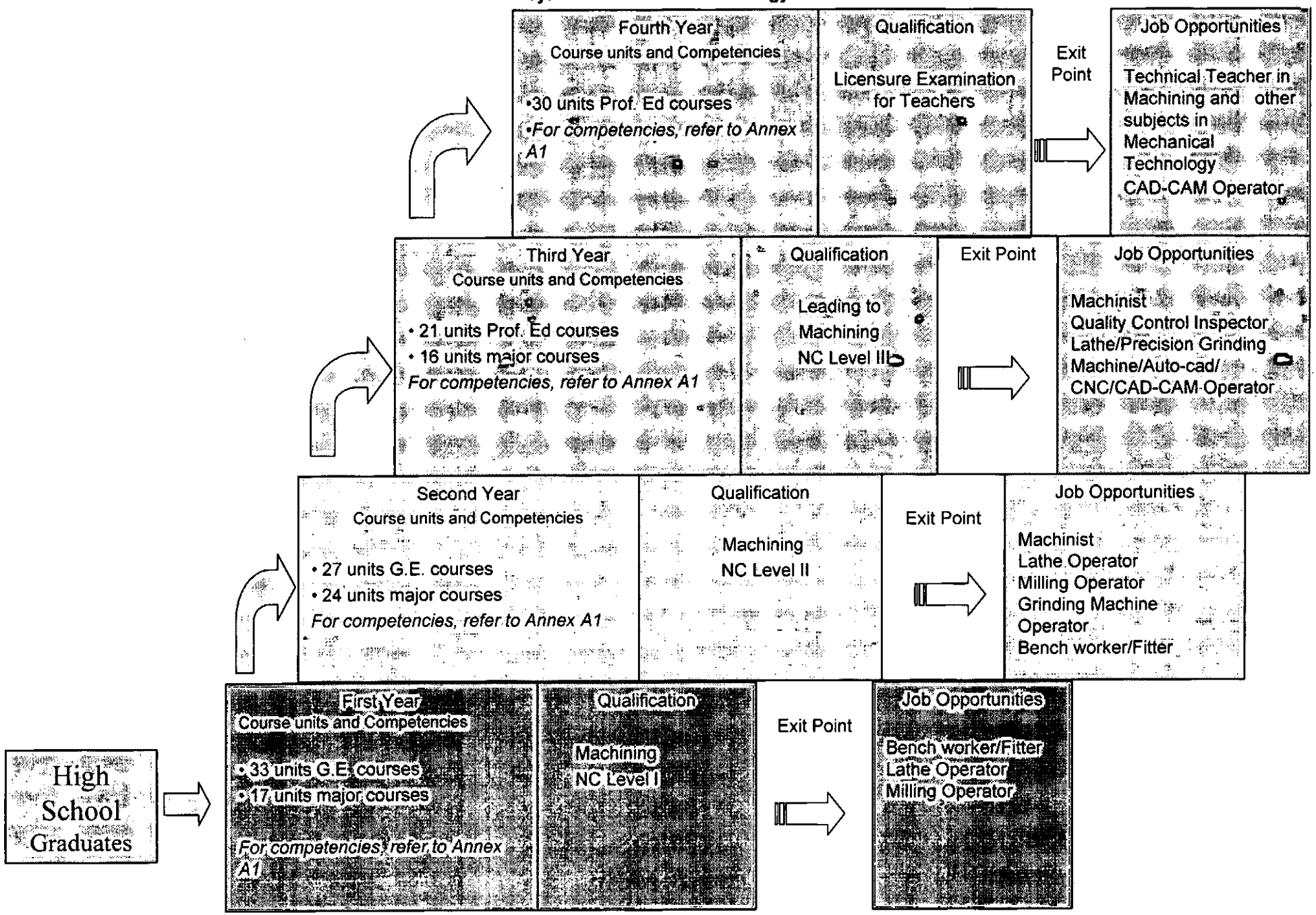
		• Install PACU electrical systems • Install PACU • Trouble-shoot PACU systems • Recover and recycle refrigerant in PACU systems • Repair and retrofit PACU systems and its accessories • Perform start-up and commissioning for PACU systems • Observe procedures, specifications and manuals of instruction • Perform housekeeping and safety practices • Document work accomplished		
Transport RAC Servicing NC II	Mobile Refrigeration and Air Conditioning	• Prepare materials and tools • Perform mensuration and calculation • Install transport air-conditioning and refrigeration units • Service and maintain transport air-conditioning and refrigeration units • Troubleshoot transport air-conditioning and refrigeration systems • Recover and recycle refrigerant in transport air-conditioning and refrigeration systems • Repair and retrofit transport air-conditioning and refrigeration and its accessories • Perform testing and commissioning for transport air-conditioning and refrigeration • Maintain tools and equipment • Perform housekeeping and safety practices • Document work accomplished	2nd year, 2nd semester	
No T.R.	Refrigeration Plant Designing	• Observe procedures, specifications and manuals of instruction • Maintain tools and equipment • Document work accomplished	2nd year, 2nd semester	

Air Duct Servicing NC II	Air Handling Units Installation, Service and Maintenance	• Prepare materials and tools • Observe procedures, specifications and manuals of instruction • Perform mensuration and calculation • Perform basic electrical work • Perform basic benchwork • Survey site for installation • Fabricate air ducts • Install air duct system • Perform air duct testing • Insulate air ducts • Repair and maintain air duct system • Maintain tools and equipment • Document work accomplished	2nd year, 2nd semester	
No T.R.	Heat Pump Operation	• Observe procedures, specifications and manuals of instruction • Maintain tools and equipment • Perform housekeeping and safety practices • Document work accomplished	3rd year, 1st semester	
No T.R.	Ancillary Equipment Service and Repair	• Observe procedures, specifications and manuals of instruction • Perform basic benchwork • Maintain tools and equipment • Perform housekeeping and safety practices • Document work accomplished	3rd year, 1st semester	

"Annex A"

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Mechanical Technology



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
MT 111 - Occupational Health and Safety Practices	1	1	0	18	None	Apply Safety Practices	Safety Practices
						Perform Routine Housekeeping	Shop House Keeping
MT 112 - Basic Machine Tools	3	2	3	90	None	Turn Workpiece (Basic)	Basic Machine Tools
						Mill workpiece (Basic)	
						Grind workpiece (Basic)	
MT 113 - Bench work	3	2	3	90	None	Select and cut workshop materials	Select and cut workshop materials
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	25	23.5	7.5	558			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
MT 121 - Lathe Machine Operations	3	2	3	90	None	Turn Workpiece (Basic)	Turn Workpiece
						Grind workpiece (Basic)	Grind workpiece (Basic)
MT 122 - Metrology	2	1	3	72	None	Measure workpiece (Complex)	Measure workpiece (Complex)
MT 123 - Heat Treatment	2	1	3	72	None	No Training regulations	
MT 124 - Milling Machine Operations	3	2	3	90	None	Mill workpiece (Basic)	Mill workpiece (Basic)
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	{2}	2	None	36	None		
Total	25	23	12	630			

Note : After finishing First Year, students can exit and be issued a Certificate of Achievement by the College. He can also take the TESDA Assessement for Machinign NC Level I.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
MT 211 - Grinding Machine Operations	3	2	3	90	None	Grind workpiece (Complex)	Grind workpiece (Complex)
MT 212 - Auto-Cad Mechanical	3	2	3	90	None	Interfret working drawing and sketches	Auto-Cad Mechanical
MT 213 - Tool and Die Making	3	2	3	90	MT 121 MT 122 MT 123 MT 124	Turn Workpiece (Intermediate) Mill workpiece (Intermediate) Perform bench work (Complex)	Turning Workpiece (Intermediate) Milling workpiece (Intermediate) Bench work operations(Complex)
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	24	26	9	630			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs- per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
MT 221 - Blueprint Reading	3	2	3	90	MT 212	Interfret working drawing and sketches	Interfreting working drawing and sketches
MT 222 - Corrective and Preventive Mainten	3	2	3	90		Perform Corrective and Preventive Maintenance	Corrective and Preventive Maintenance
MT 223 - Applied Mechanical Mathematics	2	1	3	72		Perform Shop Computations (Basic-Advance)	Shop Computations
MT 224: Electrically Discharge Machining	2	1	3	72	MT 213	No T.R.	
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	22	23	12	630			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
IIm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

NOTE: After finishing Second Year, students can exit and be issued Certificate of Achievement by the College. He can also take the TESDA Asessment for Machining NC Level II

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
MT 312 - Jigs and Fixtures, Tool and Die Designing	3	2	3	90	MT 214	No TR	
MT 313 - CAD-CAM	3	1	6	126	MT 212	No TR	
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	27	24	9	594			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

Note : After finishing Third Year, students can exit and take the Assessment for Machining NC Level III.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Mechanical Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Mechanical Technology

Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
		BASIC Competencies		
Machining NC I	Occupational Health and Safety Practices	• Participate in workplace communication • Work in a team environment • Practice career professionalism • Practice occupational health and safety procedures	First year, first semester	
		COMMON Competencies		
	Blueprint Reading	• Interpret working drawings and sketches	Second year, second semester	
	Bench Work	• Select and cut workshop materials	First year, first semester	
	Applied Mechanical Math	• Perform shop computations (Basic)	First year, second semester	

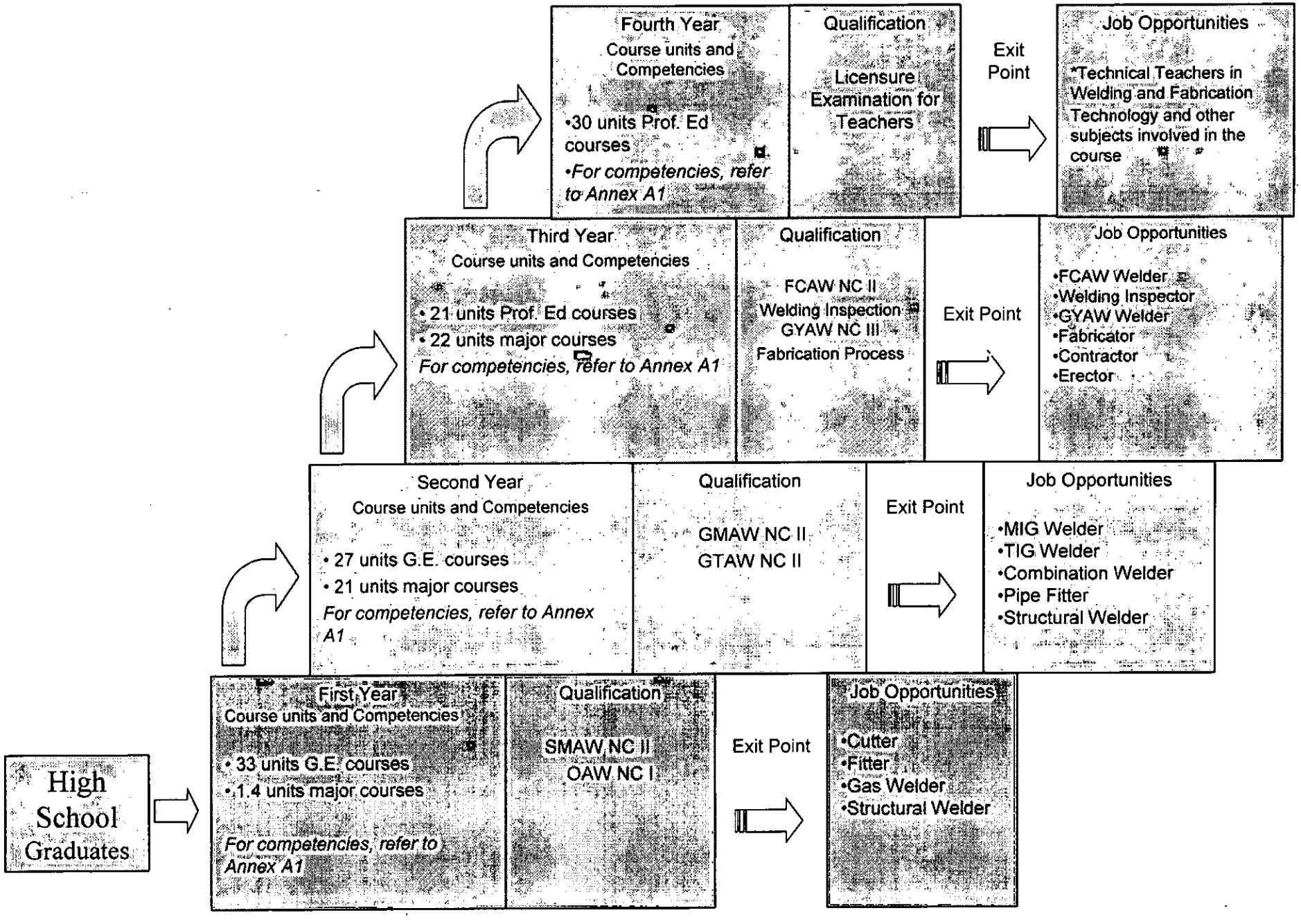
	Metrology	• Measure work piece (Basic) • Measure work piece using angular measuring instruments	First year, second semester	
	Corrective and Preventive Maintenance	• Perform preventive and corrective maintenance	Second year, second semester	
		CORE Competencies		
	Bench Work	• Perform bench Work (Basic)	First year, first semester	
	Basic Machine Tools	• Turn work piece (Basic) • Mill Work piece (Basic) • Grind Work piece (Basic)	First year, first semester	
		COMMON Competencies		
Machining NC II	Auto-CAD Mechanical	• Interpret working drawings and sketches	Second year, first semester	
	Applied Mechanical Math	• Perform shop computations (Intermediate)	First year, second semester	
	Metrology	• Measure workpiece using angular measuring instruments	Second year, first semester	

	Corrective and Preventive Maintenance	• Perform preventive and corrective maintenance	Second year, second semester	
		CORE Competencies		
	Tool and Die Making	• Perform bench work (Complex)	Second year, first semester	
	Lathe Machine Operations	• Turn workpiece (Intermediate)	First year, second semester	
	Milling Machine Operations	• Mill workpiece (Intermediate)	First year, second semester	
	Grinding Machines and Operations	• Grind workpiece (Complex)	Second year, first semester	

"Annex A"

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Welding Technology



MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

"Annex A1"

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
WFT 111: Occupational Health and Safety Practices	1	1	0	18	None	Perform occupational health and safety practices.	Practicing Occupational Health and Safety Practices
						Perform routine housekeeping	
WFT 112: Metal Testing and Heat Treatment Processes	3	2	3	90	None		
WFT 113: Basic Shielded Metal Arc Welding (SMAW) Process	3	1	6	126	None	Prepare weld materials	Preparing weld materials
						Set-up welding equipment	Setting-up welding equipment
						Fit-up weld materials	Fitting-up weld materials
						Weld Carbon steel plates in 1F, 2F, 3F, 4F,1G,2G,3G positions	Welding Carbon steel plates in 1F, 2F, 3F, 4F,1G,2G,3G positions
						Repair welds	Repair welds
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None	Interpret technical drawing and plans	Interpreting technical drawings and plans
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	25	22.5	10.5	594			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : First Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
WFT 121: Oxy Acetylene Welding Cutting and Brazing	3	1	6	126	None	Prepare weld materials	Oxy acetylene welding, cutting and brazing
						Set-up welding outfit	
						Fit-up weld coupons	
WFT 122: Advance Shielded Metal Arc Welding (SMAW)	4	1	6	162	WFT 113	Prepare weld materials	Performing Safety precautions and practices
						Set-up welding equipment	
						Fit-up weld materials	
						Weld carbon steel plates and pipes	
						Repair welds	
Eng 121 : Oral Communication	3	3	None	54	None	* Participate in workplace communication	Participating in workplace communication
Math 121 : Trigonometry	3	3	None	54	Math 111		
Nat Sci 121 : Earth Science	3	3	None	54	None		
Soc Sci 121 : Basic Economics with TAR, Intrepreneurship and Work Ethics	3	3	None	54	None		
Comp 121 : Information and Communication Technology	3	3	None	54	None		
P.E. 121 : Rhythmic Activities	{2}	2	None	36	None		
Total	22	19	12	594			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
WFT 211: Gas Metal Arc Welding (GMAW) Process	4	1	9	144	WFT 113	Prepare weld materials	Performing Safety precautions and practices
						Set-up welding equipment	GMAW Process
						Fit-up weld materials	
						Weld carbon steel plates and pipes	
						Repair welds	
WFT 212: Pattern Development	3	1	6	126	None	No training regulation	Pattern development
WFT 213: Weldment Expansion and Contraction	2	1	3	72	None	No training regulation	Weldment expansion and contraction
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	24	23	18	702			

Note : A student may exit after one year of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
WFT 221: Gas Tungsten Arc Welding (GTAW) Process	4	1	9	144	OAW NC1	Prepare weld materials	GTAW process
						Set-up welding equipment	
						Fit-up welding materials	
						Weld carbon steel plates and pipes	
						Repair welds	
WFT 222: Pipe Fitting	3	1	6	126	WFT 121	Develop a pattern	Pipe fitting
					WFT 212	Prepare fitting materials	
						Layout spools and fittings	
						Assemble spools and fitting	
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	19	18	15	576			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Ilm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
WFT 313: Flux Cored Arc Welding (FCAW) Process	4	1	9	144	WFT 211	Prepare weld materials	Processing FCAW
						Set-up welding equipment	
						Fit-up welding materials	
						Weld carbon steel plates and pipes	
						Repair welds	
WFT 314: Advanced Gas Tungsten Arc Welding (GTAW) Process	3	1	6	126	WFT 221	Prepare weld materials	
						Set-up welding equipment	
						Fit-up welding materials	
						Weld alloy steel pipes	
						Repair welds	
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	28	21	0	378			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

Note : A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per Week	Lab hrs per Week	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Welding and Fabrication Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

CHED/TESDA/REGISTRAR'S EVALUATION FORM

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION (BTTE)
Major: Welding and Fabrication Technology

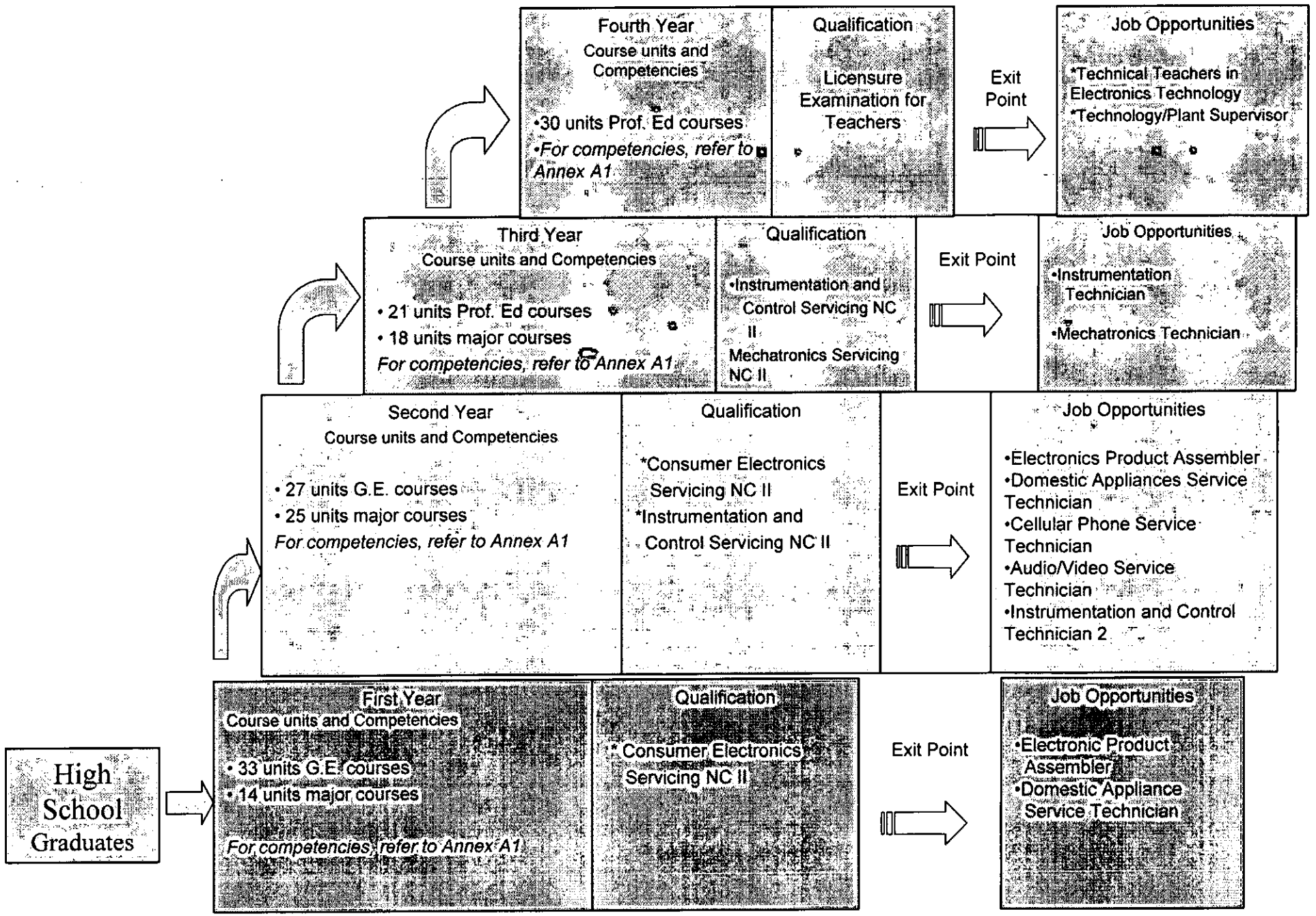
Qualification Title/ NC Level	Course Title	Course Competencies	Year/Semester Offered	Remarks
SMAW NC I	Occupational Health and Safety Practices	• Perform occupational health and safety practices.	First year, first semester	
	Basic Shielded Metal Arc Welding (SMAW) Processes	• Prepare weld materials. • Set-up welding equipment. • Fit-up weld materials. • Weld Carbon steel plates in 1F, 2F, 3F, 4F,1G,2G,3G positions .	First year, first semester	
NC II	Oxy Acetylene Welding Cutting and Brazing	• Prepare weld materials. • Set-up welding outfit. • Fit-up weld coupon.	First year, second semester	
NC II	Advance Shielded Metal Arc Welding	• Prepare weld materials. • Set-up welding equipment. • Fit-up weld materials. • Weld carbon steel plates and pipes. • Repair welds.	First year, second semester	

GMAW NC II	Gas Metal Arc Welding (GMAW) Process	• Prepare weld materials. • Set-up welding equipment. • Fit-up weld materials. • Weld carbon steel plates and pipes. • Repair welds.	Second year, first semester	
	Gas Tungsten Arc Welding (GTAW) Process	• Prepare weld materials. • Set-up welding equipment. • Fit-up weld materials. • Weld carbon steel plates and pipes. • Repair welds.	Second year, first semester	
	Pipe Fitting	• Develop a pattern. • Prepare fitting materials. • Layout spools and fittings. • Assemble spools and fitting.	Second year, second semester	
	Flux Cored Arc Welding (FCAW) Process	• Prepare weld materials. • Set-up welding equipment. • Fit up welding materials. • Weld carbon steel plates and pipes. • Repair welds.	Third year, first semester	
	Advanced Gas Tungsten Arc Welding (GTAW) Process	• Prepare weld materials. • Set-up welding equipment. • Fit up welding materials. • Weld alloy steel pipes. • Repair weld.	Third year, first semester	

"Annex A"

LADDERIZED BACHELOR OF TECHNICAL TEACHER EDUCATION

Major in Electronics Technology



"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per wk**	**Lab hrs per wk**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Elx 111: Occupational Health and Safety Practices	1	1	None	18	None	Perform occupational health and safety Practices	Performing occupational health and safety procedures
Elx 112 : Basic Electronics	3	2	3	90	None	Assemble and Disassemble Consumer Electronics Products and Systems	Assembling and Disassembling Consumer Electronics Products and System
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Elx 113 : Digital Electronics	3	2	3	90	None	Assemble and Disassemble Consumer Electronics Products and Systems	Assembling and Disassembling Consumer Electronics Products and System
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Eng 111 : English for Study and Thinking Skills	3	3	None	54	None		
Fil 111 : Sining ng Pakikipagtalastasan	3	3	None	54	None		

"Annex A1"

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : First Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Math 111 : Fundamentals of Mathematics including College Algebra	3	3	None	54	None		
Nat Sci 111 : Biological Science	3	3	None	54	None		
Soc Sci 111 : General Psychology Including Population Education	3	3	None	54	None		
Draw 111 : Fundamentals of Drawing	3	1.5	1.5	54	None		
P.E. 111 : Self-Testing Activities	{2}	2	None	36	None		
Total	25	23.5	7.5	558			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Elx 211 : Audio System Repair and Maintenance	5	3	6	162	None	Assemble and Disassemble Consumer Electronics Products and Systems	Assembling and Disassembling Consumer Electronics Products and System
						Maintain and Repair Audio/Video Products and Systems	Maintaining and Repairing Audio/Video Products and Systems
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Elx 212 : Cellular Phone Repair and Maintenance	5	3	6	162	None	Assemble and Disassemble Consumer Electronics Products and Systems	Assembling and Disassembling Consumer Electronics Products and System
						Maintain and Repair Cellular Phones	Maintaining and Repairing Cellular Phones
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Eng 211 : Survey of Philippine Literature	3	3	None	54	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Second Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Nat Sci 211 : Elective (Chemistry or Psysics)	3	3	None	54	None		
Soc Sci 211 : Politics and Governance with Philippine Constitution	3	3	None	54	None		
Fil 211 : Pagbasa at Pagsulat sa Iba't ibang Disiplina	3	3	None	54	None		
Hum 211 : Logic	3	3	None	54	None		
P.E. 211 : Fundamentals of Games and Sports	{2}	2	None	36	None		
NSTP 211 : Literacy Training Service	{3}	3	None	54	None		
Total	25	26	12	684			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Elx 221 : Video System Repair and Maintenance	5	3	6	162	None	Assemble and Disassemble Consumer Electronics Products and Systems	Assembling and Disassembling Consumer Electronics Products and System
						Maintain and Repair Audio/Video Products and Systems	Maintaining and Repairing Audio/Video Products and Systems
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Elx 222 : Instrumentation and Process Control	5	3	6	162	None	Install Instrumentation and Control Devices	Installing Instrumentation and Control Devices
						Calibrate Instrumentation and Control Devices	Calibrating Instrumentation and Control Devices
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Eng 221 : Technical Writing in the Discipline Including Fundamentals of Research	3	3	None	54	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Second Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Fil 221 : Retorika	3	3	None	54	None		
Soc Sci 221 : Philippine History	3	3	None	54	None		
Soc Sci 222 : Life and Works of Rizal	3	3	None	54	None		
P.E. 221 : Recreational Activities for College Students	{2}	2	None	36	None		
NSTP 221 : Civic Welfare Training Service	{3}	3	None	54	None		
Total	22	23	12	630			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Summer

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
IIm 1 : Industry Immersion 1	5	None	30	270			
Total	5	0	30	270			

Note : A student may exit after two years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Elx 311 : Instrumentation Troubleshooting and Maintenance	3	2	3	90	None	Calibrate Instrumentation and Control Devices	Calibrating Instrumentation and Control Devices
						Configure Instrumentation and Control Devices	Configuring Instrumentation and Control Devices
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Elx 312 : Industrial Automation and Control Electronics	5	3	6	162	None	Install Mechatronics Devices	Installing Mechatronicsl Devices
						Configure and Test Mechatronics Devices	Configuring and Testing Mechatronics Devices
						Use of Hand Tools	Using Hand Tools
						Perform Mensuration and Calculation	Performing Mensuration and Calculation
						Prepare and Interpret Technical Drawings	Preparing and Interpreting Technical Drawings
						Apply Quality Standards	Applying Quality Standards
						Terminate and Connect Electrical and Electronics Circuits	Terminating and Connecting Electrical and Electronics Circuits
Educ 311 : Adolescent Psychology	3	3	None	54	None		
Educ 312 : Social Dimensions of Education	3	3	None	54	None		
Educ 313 : Facilitating Learning	3	3	None	54	None		
Educ 314 : Principles of Teaching	3	3	None	54	None		

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Third Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per wk**	**Lab hrs per wk**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 315 : Educational Technology 1	3	3	None	54	None	* Use personal computer in education technology	* Using personal computer technology
Educ 316 : Assessment of Student Learning 1	3	3	None	54	None		
Educ 317 : Field Study 1 to 3	3	3	None	54	None		
Total	29	26	9	630			

[redacted]MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES[redacted]

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Third Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per Week**	**Lab hrs per Week**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
IIm 2 : Industry Immersion 2	10	None	30	540	IIm 1		
Total	10	0	30	540			

NOTE: A student may exit after three years of study with a Certificate of Achievement indicating the competencies taken. He may take the assessment administered by TESDA and if he/she passes the test, he/she shall be issued the National Certificate on the particular level.

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Fourth Year, First Semester

Higher Education Courses						TVET Competencies	
Course Title	Unit	Lec hrs per wk	Lab hrs per wk	Hrs per Sem	Prerequisite	Units of Competency	Module Title
Educ 411 : The Teaching Profession Including Code of Ethics	3	3	None	54		* Maintain professional competence	* Maintaining professional competence
						* Practice career professionalism	* Practice career professionalism
Educ 412 : Strategies of Teaching	3	3	None	54		* Plan training sessions	* Planning training sessions
Educ 413 : Educational Technology 2	3	3	None	54	Educ 315	* Use audio-visual and multi-media equipment	* Using audio-visual and multi-media equipment
Educ 414 : Curriculum Development Including Project Development	3	3	None	54		* Develop training curriculum	* Developing training curriculum
						* Develop instructional materials	* Developing instructional materials
Educ 415 : Assessment of Students Learning 2	3	3	None	54	Educ 316	* Design assessment tools	* Design assessment tools
						* Conduct competency assessment	* Conducting competency assessment
Educ 416 : Career Guidance and Counseling	3	3	None	54		* Conduct career counseling session	* Conducting career counseling session
Educ 417 : Field Study 4 to 6	3	3	None	54	Educ 317	* Conduct feedback session	* Conducting feedback session
Educ 418 : Special Research Project	3	3	None	54	Eng 221	* Undertake research in TVET	* Undertaking research in TVET
Total	24	24	0	432			

MATRIX ON THE INTERFACE OF HIGHER EDUCATION COURSES AND TVET COMPETENCIES

Program Title: Ladderized Bachelor of Technical Teacher Education

Major : Electronics Technology

Year Level / Semester : Fourth Year, Second Semester

Higher Education Courses						TVET Competencies	
Course Title	**Unit**	**Lec hrs per wk**	**Lab hrs per wk**	**Hrs per Sem**	**Prerequisite**	**Units of Competency**	**Module Title**
Educ 421 : Practice Teaching	6	24	None	360		* Deliver competency-based training sessions	* Delivering competency-based training sessions
						* Maintain training facilities	
Total	6	24	0	360			

"ANNEX B"

AUTOMOTIVE TECHNOLOGY

Course Code	Course Title	Units
AT 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
AT 112	INTERNAL COMBUSTION ENGINE SERVICING, REPAIR, AND MAINTENANCE	4
AT 113	PREVENTIVE MAINTENANCE AND GAS/DIESEL ENGINE TUNE-UP	3
AT 121	AUTOMOTIVE ELECTRICAL SYSTEM SERVICING, REPAIRING AND MAINTENANCE	5
AT 122	POWER TRAIN AND UNDER CHASSIS SERVICING, REPAIRING AND MAINTENANCE	4
AT 123	AUTOMOTIVE SERVICE SHOP MANAGEMENT	1
AT 211	BASIC AUTOMOTIVE AIR-CONDITIONING SERVICING, REPAIRING AND MAINTENANCE	2
AT 212	MOTOR CYCLE AND SMALL ENGINE SERVICING, REPAIRING AND MAINTENANCE	2
AT 213	AUTOMOTIVE BODY REPAIR AND SUBSTRATE PREPARATION	4
AT 221	ENGINE OVERHAULING AND REBUILDING	5
AT 222	METALLIC AND SOLID COLOR PAINTING APPLICATIONS AND TECHNIQUES	3
AT 223	BASIC DRIVING	2
IIm 1	INDUSTRY IMMERSION 1	5
AT 311	BASIC POWER CONVERSION SYSTEM SERVICING, REPAIR AND MAINTENANCE	3
AT 312	BASIC ELECTRONIC ENGINE MANAGEMENT SYSTEM OPERATION AND SERVICING	3
IIm2	INDUSTRY IMMERSION 2	10
TOTAL		**57**

GARMENTS, FASHION AND DESIGN

Course Code	Course Title	Units
GFD 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
GFD 112	PERSONALITY DEVELOPMENT	2
GFD 113	FABRIC AND GARMENT DESIGNING TECHNIQUES	3
GFD 121	BASIC SEWING PROCESSES	3
GFD 122	INDUSTRIAL SEWING MACHINE OPERATION, REPAIR AND MAINTENANCE	3
GFD 211	PATTERN DRAFTING AND DESIGNING	5
GFD 212	GRAMENTS' DESIGN AND CONSTRUCTION	5
GFD 221	PATTERN GRADING AND MARKER MAKING	5

GFD 222	MEN'S GARMENTS CONSTRUCTION	5
GFD 311	ADVANCE GARMENTS DESIGNING AND CONSTRUCTION	5
GFD 312	MASS PRODUCTION TECHNIQUES AND PRACTICES	5
IIm 1	INDUSTRY IMMERSION 1	5
IIm 2	INDUSTRY IMMERSION 2	10
TOTAL		**57**

DRAFTING TECHNOLOGY

Course Code	Course Title	Units
DT 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
DT 112	DRAFTING FUNDAMENTALS AND THEORY OF DESIGN	3
DT 121	BASIC AUTO-CAD (2-D APPLICATIONS)	4
DT 122	MACHINE DRAFTING USING AUTO-CAD	4
DT 211	AUTO-CAD 2-D AND 3-D APPLICATIONS	5
DT 212	ARCHITECTURAL DRAFTING AND DESIGN	5
DT 221	BUILDING TECHNOLOGY AND UTILITIES	5
DT 222	CAD ARCHITECTURAL DESIGN	5
DT 311	CONSTRUCTION ESTIMATES AND SCALE MODELING	5
DT 312	GRAPHICS/COMMERCIAL ARTS WITH COMPUTER APPLICATION	5
IIm 1	INDUSTRY IMMERSION 1	5
IIm 2	INDUSTRY IMMERSION 2	10
TOTAL		**57**

WELDING AND FABRICATION TECHNOLOGY

Course Code	Course Title	Units
WFT 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
WFT 112	METAL TESTING AND HEAT TREATMENT PROCESSES	3
WFT 113	BASIC SHIELDED METAL ARC WELDING (SMAW) PROCESS	3
WFT 121	OXY-ACETYLENE WELDING, CUTTING AND BRAZING	3
WFT 122	ADVANCED SHIELDED METAL ARC WELDING (SMAW) PROCESS	4
WFT 211	GAS METAL ARC WELDING (GMAW) PROCESS	4
WFT 212	PATTERN DEVELOPMENT	3
WFT 213	FLUX-CORED ARC WELDING (FCAW) PROCESS	3
WFT 221	GAS TUNGSTEN ARC WELDING PROCESS	4
WFT 222	PIPE FITTINGS	3
WFT 311	WELDING INSPECTION AND TESTING	5
WFT 312	FABRICATION PROCESSES AND TECHNIQUES	3
WFT 313	ADVANCED GAS TUNGSTEN ARC WELDING PROCESS	3
IIM 1	INDUSTRIAL IMMERSION 1	5
IIM 2	INDUSTRIAL IMMERSION 2	10
TOTAL		**57**

MECHANICAL TECHNOLOGY

Course Code	Course Title	Units
MT 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
MT 112	BASIC MACHINE TOOLS	3
MT 121	LATHE AND MILLING MACHINE OPERATIONS	3
MT 122	METROLOGY	2
MT 123	HEAT TREATMENT	2
MT 124	MILLING MACHINE OPERATIONS	3
MT 211	GRINDING MACHINES OPERATIONS	3
MT 212	AUTO: CAD MECHANICAL	3
MT 213	TOOL AND DIE MAKING	2
MT 214	ADVANCED BENCH WORK	3
MT 221	BLUEPRINT READING	3
MT 222	CORRECTIVE AND PREVENTIVE MAINTENANCE	3
MT 223	APPLIED MECHANICAL MATHEMATICS	2
MT 311	ELECTRICALLY DISCHARGE MACHINING (EDM)	4
MT 312	JIGS AND FIXTURE, TOOL AND DIE DESIGNING	2
MT 313	CAD-CAM	3
IIM 1	INDUSTRIAL IMMERSION 1	5
IIM 2	INDUSTRIAL IMMERSION 2	10
TOTAL		**57**

CIVIL TECHNOLOGY

Course Code	Course Title	Units
CT 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
CT 112	NATIONAL BUILDING CODE IMPLEMENTATION	2
CT 113	ROUGH CARPENTRY	3
CT 121	REBAR WORK	3
CT 122	ROUGH MASONRY	3
CT 123	ELEMENTARY SURVEYING	3
CT 211	PLUMBING	3
CT 212	STRENGTH OF MATERIALS	2
CT 213	FINISHING MASONRY	3
CT 214	FINISHING CARPENTRY	3
CT 221	CONSTRUCTION SURVEYING	3
CT 222	CONSTRUCTION ESTIMATES	2
CT 223	ANALYSIS OF BUILDING STRUCTURE	2
CT 224	CONSTRUCTION PAINTING	3
CT 311	CONSTRUCTION MANAGEMENT	3
CT 312	SOIL AND CONSTRUCTION MATERIALS TESTING	3
IIm 1	INDUSTRY IMMERSION 1	5
IIm 2	INDUSTRY IMMERSION 2	10
TOTAL		**57**

"ANNEX B"

FOOD AND SERVICE MANAGEMENT

Course Code	Course Title	Units
FSM 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
FSM 112	FOOD SELECTION AND PREPARATION	4
FSM 121	MEAL MANAGEMENT	4
FSM 122	BASIC BAKING	5
FSM 211	ADVANCE BAKING	5
FSM 212	FODD PROCESSING, PACKAGING AND LABELLING	5
FSM 221	INTERNATIONAL CUISINE	5
FSM 222	QUANTITY COOKERY	5
FSM 311	CAFETERIA AND CATERING MANAGEMENT	4
FSM 312	BARTENDING AND BAR SERVICE MANAGEMENT	4
IIm 1	INDUSTRY IMMERSION	5
IIm 2	INDUSTRY IMMERSION	10
TOTAL		**57**

HEATING VENTILATING, AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

Course Code	Course Title	Units
HVACR 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
HVACR 112	INSTRUMENTATION AND CONTROL DEVICES	2
HVACR 113	DOMESTIC REFRIGERATION AND AIR-CONDITIONING (DOMRAC) ELECTRICAL CIRCUITS	4
HVACR 121	DOMESTIC REFRIGERATION AND AIR-CONDITIONING (DOMRAC) SYSTEMS SERVICE AND MAINTENANCE	5
HVACR 122	SOLDERING, WELDING AND JOINING OPERATIONS	4
HVACR 211	COMMERCIAL REFRIGERATION EQUIPMENT (CRE) INSTALLATION AND MAINTENANCE	5
HVACR 212	PACKAGE AIR CONDITIONING UNIT (PACU) INSTALLATION AND MAINTENANCE	4
HVACR 221	MOBILE REFRIGERATION AND AIR-CONDITIONING	4
HVACR 222	REFRIGERATION PLANT DESIGNING	2
HVACR 223	AIR HANDLING UNITS INSTALLATION, SERVICE AND MAINTENANCE	3
HVACR 311	HEAT PUMP OPERATION	4
HVACR 312	ANCILLARY EQUIPMENT SERVICE AND REPAIR	4
IIM 1	INDUSTRIAL IMMERSION 1	5
IIM 2	INDUSTRIAL IMMERSION 2	10
TOTAL		**57**

"ANNEX B"

ELECTRICAL TECHNOLOGY

Course Code	Course Title	Units
ET 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
ET 112	FUNDAMENTALS OF ELECTRICITY	3
ET 113	ELECTRICAL AND ELECTRONICS DEVICES	3
ET 121	ELECTRICAL WIRING SYSTEM AND DESIGN	4
ET 122	SIGNAL AND COMMUNICATION SYSTEM	3
ET 123	DIRECT CURRENT MACHINES	3
ET 211	ALTERNATING CURRENT MACHINES	4
ET 212	INDUSTRIAL ELECTRONICS CIRCUITS AND DEVICES	3
ET 213	INDUSTRIAL MOTOR CONTROLLER	3
ET 221	PNEUMATIC AND HYDRAULIC SYSTEM	3
ET 222	LOGIC CIRCUIT CONTROLLER	3
ET 311	PLC SYSTEM AND PROGRAMMING	3
ET 312	INDUSTRIAL PROCESS CONTROLLER	3
ET 313	AUTOMATION CONTROL SYSTEM	3
IIM 1	INDUSTRIAL IMMERSION 1	5
IIM 2	INDUSTRIAL IMMERSION 2	10
TOTAL		**57**

ELECTRONIC TECHNOLOGY

Course Code	Course Title	Units
ET 111	OCCUPATIONAL HEALTH AND SAFETY PRACTICES	1
ET 112	BASIC ELECTRONICS	3
ET 113	DIGITAL ELECTRONICS	3
ET 121	POWER ELECTRONICS	3
ET 122	ELECTRONICALLY-CONTROLLED DOMESTIC HOUSEHOLD APPLIANCES REPAIR AND MAINTENANCE	4
ET 211	AUDIO SYSTEM REPAIR AND MAINTENANCE	5
ET 212	CELLULAR PHONE REPAIR AND MAINTENANCE	5
ET 221	VIDEO SYSTEM REPAIR AND MAINTENANCE	5
ET 222	INSTRUMENTATION AND PROCESS CONTROL	5
ET 311	INSTRUMENTATION TROUBLESHOOTING AND MAINTENANCE	3
ET 312	INDUSTRIAL AUTOMATION AND CONTROL ELECTRONICS	5
IIM 1	INDUSTRIAL IMMERSION 1	5
IIM 2	INDUSTRIAL IMMERSION 2	10
TOTAL		**57**

Description of Courses

General Education Courses

English

English 1 – STUDY AND THINKING SKILLS IN ENGLISH

This course covers the development of communicative competence in English with emphasis on effective reading, writing and listening skills. It is designed to develop language learning strategies, effective communication techniques, and academic study skills. Lessons and activities involve development of oral and written communication skills in different social contexts, reading skills enhancement and effective use of reference and resources.

The course aims to provide students with effective language and thinking skills and language-learning strategies necessary for academic studies.

English 2 – SPEECH AND ORALCOMMUNICATION

This course gives the students an understanding of the basic principles of speech and voice production and proficiency in their use; speech skills common to all forms of oral communication; the selection and evaluation of materials for speech, and organizational thought, voice, action, and speaker-listener relations. Emphasis is given on the development of oral communication skills for effective presentation and debate, both formal and informal.

Filipino

Filipino 1 - SINING NG PAKIKIPAGTALASTASAN

Pag-aaralan ang Filipino bilang isang wikang dinamiko na gagamitin sa komunikasyong pasalita at pasulat. Lilinangin ang apat na makrong kasanayan sa pakikinig, pagsasalita, pagbasa at pagsulat sa pamamagitan ng iba't ibang texto at kontexto.

Filipino 2 - PAGBASA AT PAGSULAT SA IBA'T IBANG DISIPLINA

Ang kursong ito ay magbibigay-pokus sa pagbasa at pagsulat bilang kasangkapan sa pagkatuto. Ituturo sa kursong ito ang mga estratehiya sa pagbasa ng iba't ibang genre ng mga textong nakasulat. Lilinangin din ang mga kasanayan sa pag-unawa lalo na ang kritikal na pag-unawa, gayundin ang kasanayan sa pagsulat ng iba't ibang sulating akademik. Magiging batayang paksa ang ukol sa humanidades at agham panlipunan, at agham at teknolohiya.

Filipino 3 - RETORIKA

Sumasaklaw ang kurso sa malikhaing pagsulat kaugnay ng apat na paraan ng pagpapahayag: deskriptibo, naratibo, ekspositori at argumentatibo, na may pokus sa mga estilo ng wika. Lilinang ang kursong ito sa mga kasanayan sa pasalita at pasulat na pagpapahayag ng estudyante bilang isang indibidwal, bahagi ng etnikong grupo, mamamayan ng isang bansa, at bahagi ng isang global na komunidad.

Literatura / Literature

ANG PANITIKAN NG FILIPINAS /

Pag-aaral sa iba't ibang anyo ng literatura sa pamamagitan ng pagbasa sa ilang tekstong pampanitikan na hango sa iba't ibang rehyon ng Filipinas at iba't ibang panahon ng kasaysayan ng bayan.

THE LITERATURES OF THE PHILIPPINES

Study of literary forms or genres as exemplified by selected literary texts from various regions of the Philippines written at different periods in Philippine literary history.

Mathematics

Math 1 - FUNDAMENTALS OF MATHEMATICS

This is an integrative course. It is meant to synthesize and reinforce the concepts, processes and skills learned in secondary school. The course is guided by the following priciples:

- the need to emphasize on conceptual understanding more than procedural understanding but not sacrificing fundamental quantitative skills;
- the need to use contexts that capture real-world problems and maximize the use of modeling and visualizing techniques and using appropriate technology to solve these problems;
- the need to engage learners in reflective thinking and provide them opportunities to "think outside the box."

This course further intends to develop and strengthen the following general skills: problem formulating and solving, justifying and reasoning, evaluating and extending, and analytical skills. The use of graphing calculators and computer algebra systems is highly encouraged.

Math 2 - CONTEMPORARY MATHEMATICS

This course offers to the student an opportunity to learn when and how mathematics can be used in many different real-life situations. Consequently, this course will help students expand their content knowledge in mathematics. The following principles underlie this course:

- mathematics is useful
- mathematics is realistic and relevant
- mathematics is interesting
- mathematics is needed by all

This course aims to integrate mathematics theories to reality, thereby increasing the level of mathematical literacy of Filipinos. The approach is to contextualize the concepts identified below. Problem solving is a central feature of this course. The use of graphing calculators and computer algebra systems is highly encouraged.

Social Sciences

Soc Sci 1 – GENERAL PSYCHOLOGY INCLUDING POPULATION EDUCATION

This is an introductory course to the study of psychology as a science of human behavior. Discussions of different theories, principles, and concepts aim to give the students basic knowledge of human behavior and focus on the fundamental questions of how and why we think, feel and behave the way we do; how we get along with one another; and why we become the unique individuals that we are.

Also discussed are the development and characteristics of Filipino culture, the personal and social values of Filipinos, the historical influence on cultural variations, the structure of Filipino culture viewed in terms of adaptability to change, and an understanding of different cultures in today's world with emphasis on population, social change and rural development.

Soc Sci 2 – BASIC ECONOMICS WITH TAR

This course is an introduction to Economics, the basic concepts of microeconomics, money and banking, economic growth and development and international economics. Also discussed are the basic concepts of taxation and land reform.

Soc Sci 3 – POLITICS AND GOVERNANCE WITH PHILIPPINE CONSTITUTION

This is a study of the basic concepts of political science (i.e. power, state government, ideology, nation, political forces), the types of political systems and the processes of political development. The principles and concepts of political sciences especially as they apply to the Philippines, the historical development of political institutions from pre-Spanish times to the present with special emphasis on the new constitution.

Information and Communication Technology

ICT 1 - INFORMATION COMMUNICATIONS TECHNOLOGY (ICT)

This course focuses on the understanding of concepts, the acquisition of basic skills and attitudes related to the various Information and Communications Technologies. The course covers concepts and skills aimed at providing students with basic literacy on current ICTs including the Internet and other telecommunications and network-based technologies and their utilization for research, communication, publishing, productivity, teaching, and learning. The course is delivered through a combination of lecture and laboratory activities.

ICT 2 – COMPUTER LITERACY

The course presents an application of computer hardware, software, and information systems as applied to the practice of the profession. This serves as an introduction to computers as data processing tool. Students are given basic training in word processing, spreadsheet and Internet among others.

Humanities

PHILOSOPHY (LOGIC)

This course is a specially outlined study of the basic principles of philosophy and its branches covering psychology, ethics and theodicy. It also covers an introduction to formal logic to develop the students' skills in forming clear and systematic thought, conducting inquiries and carrying out abstract logical and critical thinking.

"Annex C"

Mandated Subjects

PHILIPPINE HISTORY

This course provides a general survey of the history of the Filipino people from the pre-colonial times to the present. It analyzes the causes and impact of colonization and traces the stream and growth of Filipino nationalism and cultural heritage.

LIFE AND WORKS OF RIZAL

This course deals with an analysis, evaluation and interpretation of Rizal's life, his birth and parentage, education and travels. The student is initiated to a reflective study of Rizal's thoughts, ideas as revealed in his novels, poems and essays. It also includes discussion on the validity, applicability and usefulness of Rizal's ideas to contemporary Philippine society.

DESCRIPTION OF COURSES

Professional Education Subjects

Educ 311 : Adolescence Psychology

This course deals with the pattern of development of individuals during the adolescence period with emphasis on the biological, cognitive, social and personality traits changes. It also includes the application of the different theories in the students' workplace specifically in their areas of specialization.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 312 : Social Dimensions of Education

This course introduces the social science theories and research as they relate to education. It focuses on the understanding and analysis of various topics such as the four pillars of education, intercultural communication and cultural changes, social institutions gender and development, gloabalization and education in the new social milieu.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 313 : Facilitating Learning

This course aims to provide the would-be teachers with intensive discussion of the various theories of learning and their implications and application to the teaching-learning situations.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 314 : Principles of Teaching

This course deals with the fundamental principles and theories of teaching-learning and their applications to classroom

teaching. Special focus is given to how these theories and principles are applied to the adolescent and adult learners in the would-be teacher areas of specialization.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 315 : Educational Technology 1

This course focuses on the roles and functions of educational technology in the teaching-learning process. It exposes the students to the planning and development of print media materials and low-cost audio-visual instructional materials. It also includes the technological aesthetic, pedagogical, and ethical issues of interactive multimedia.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 316 : Assessment of Student Learning 1

This course deals with the development and utilization of assessment tools to improve the teaching-leaning process especially in technical vocational courses. Its emphasis is on the use of testing for measuring thinking and manipulative skills. It allows the students to go through the standard steps in test construction for quality competency assessment.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 317 : Field Study 1 to 3

This course consists of three parts. Field Study 1 provides the would-be teachers the opportunity to verify the behavior of the learners in the actual learning environment; Field Study 2, requires them to apply the teaching theories and principles in the learning environment; and Field Study 3 gives them the experience of preparing teaching aids for classroom use.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 411 : The Teaching Profession Including Code of Ethics

This course provides the students insights on the nature and importance of teaching, the related laws governing the teaching profession, the multifarious tasks, activities, and responsibilities expected of a teacher, the personal and professional qualities if future technician teachers, the code of ethics of professional teacher.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 412 : Strategies of Teaching

This course deals with the various approaches, methods and techniques of teaching with emphasis on competency-based training. It also provides the students the opportunity to prepare lesson plans, plan training sessions, maintains teaching resources and facilities.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 413 : Educational Technology 2

This course deals with the development of the necessary skills of the would-be teachers in creating effective multi-media teaching materials and documents.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 414 : Curriculum Development Including Project Planning and Development

This course deals with the basic principles, approaches, and procedures in developing a curriculum. It focuses on the new instructional innovations in the competency-based education in preparing and developing easy to use self-paced individualized course of study.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 415 : **Assessment of Student Learning 2**

This course focuses on the development and utilization of alternative forms of assessment in measuring authentic learning of vocational competencies. Emphasis is given on how to assess process-oriented and product-oriented learning targets as well as affective learning. The students will experience developing assessment instruments like rubrics, for performance-based and portfolio assessment.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 416 : **Career Guidance and Counseling**

This course deals with the nature, principles and techniques of career guidance, and counseling and their applications in the educational setting.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 417 : **Field Study 4 to 6**

This course consists of three parts. Field Study 4 provides the students the opportunity to identify and utilize various teaching techniques in teaching their area of specialization. They are required to observe classes, made lesson plans, and teach students to a group of learners. Field Study 5 allows the students to have hands on experiences n signing an assessment tool and evaluate its results based on the principles of testing. Field study 3 enables the students to utilize alternative assessment tools in actual classroom setting.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 418 : **Special Research Project**

This course deals with the principles and phases of developing a special research project in the students' field of specialization.

Credit Units	:	3
No. of lecture hours	:	3
No. of hours per semester	:	54

Educ 421 : **Student Teaching**

This course gives the would-be teaches the opportunity to engage in actual teaching situations under the guidance of cooperating teachers in their respective areas of specialization.

Credit Units	:	6
No. of lecture hours	:	27
No. of hours per semester	:	486

Course Description of Technology Majors
AUTOMOTIVE TECHNOLOGY

AT 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry and the school. It includes topics such as personal safety, safety precautions and practices, hazards anticipation, accident prevention, and first aid administration. It also develops and enhances the knowledge, skills, and attitude of students to safely perform their tasks.

No. of credit units	:	1
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	none
No. of training hours per semester	:	18
NC Level	:	Leading to NC Level I

AT 112 : INTERNAL COMBUSTION ENGINE SERVICING, REPAIR, AND MAINTENANCE

This course is designed to develop students' knowledge, skills, and attitude in servicing, repairing, and maintaining internal combustion engines. It deals with the fundamentals of gasoline and diesel engine operation, engine mechanical parts, and engine auxiliary systems. It also includes types, applications, and care of automotive hand tools, measuring tools, electrical test meters, electrical/ pneumatic/ hydraulic equipment, and other miscellaneous tools. Practical activities are integrated into each topic to complement the theoretical part of the course.

No. of credit units	:	4
No. of lecture hours per week	:	2
No. of laboratory hours per week	:	6
No. of training hours per semester	:	144
NC Level	:	Leading to NC Level II

AT 113 : PREVENTIVE MAINTENANCE AND GAS/DIESEL ENGINE TUNE-UP

This course deals with the principles and practices involved in automotive preventive maintenance and engine tune-up in accordance with the standards set by the industry. It covers the topics such as types of scheduled servicing, routine vehicle checks, inspections and adjustments.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester: 90
NC Level : Leading to NC Level I

AT 121 : AUTOMOTIVE ELECTRICAL SYSTEM SERVICING, REPAIR, AND MAINTENANCE

This course deals with the operating principle, service, repair, and maintenance of automotive electrical systems such as the starting, charging, ignition, preheating, lighting, signal, hazard, information/ gauge circuit, horn, wiper, and washer circuits system. It also includes automotive electrical circuit wiring connection and troubleshooting.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester: 162
NC Level : Leading to NC Level I

AT 122 : POWER TRAIN AND UNDER CHASSIS SERVICING, REPAIR AND MAINTENANCE

This course will help students to efficiently and effectively service, repair, and maintain power train and under chassis systems and related components. It will equip students with information and skills necessary to perform the various tasks in power train, brake, steering, and suspension systems.

No. of credit units : 4
No. of lecture hours per week : 2
No. of laboratory hours per week : 6
No. of training hours per semester: 144
NC Level : Leading to NC Level I & II

AT 123 : AUTOMOTIVE SERVICE SHOP MANAGEMENT

This course deals with the knowledge and skills in managing automotive service shop. It covers topics such as workplace communication skills, working in a team environment, leading a team, planning and organizing work.

No. of credit units : 1
No. of lecture hours per week : 1
No. of laboratory hours per week : none
No. of training hours per semester: 18
NC Level : Leading to NC Level II

AT 211 : AUTOMOTIVE AIR-CONDITIONING SYSTEM SERVICING, REPAIR, AND MAINTENANCE

This course deals with the service, repair, and maintenance of automotive air-conditioning system. It covers topics such as automotive air-conditioning components and its operating principle. It will also focus on the recovery and charging of refrigerant.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester: 72

AT 212 : MOTOR CYCLE AND SMALL ENGINE SERVICING, REPAIR, AND MAINTENANCE

This course deals with the service, repair, and maintenance of motorcycle and small engine. It covers the topics such as motorcycle and small engine preventive maintenance, overhauling procedure, tune-up and troubleshooting.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester: 72
NC Level : Leading to NC Level I

AT 213 : AUTOMOTIVE BODY REPAIR AND SUBSTRATE PREPARATION

This course covers the study and application of techniques and procedures to repair collision damage to the body panels and frameworks. It includes dent removals, cutting, welding, body repair special tools, dollies, body surface treatment, sanding, cleaning, application of body filler and epoxy prime coating.

No. of credit units : 4
No. of lecture hours per week : 2
No. of laboratory hours per week : 6
No. of training hours per semester: 144
NC Level : Leading to NC Level II

AT 221 : ENGINE OVERHAULING AND REBUILDING

It deals with the analysis of gas and diesel engine to determine its condition prior to overhauling using test procedures such as compression testing, oil pressure testing, noise recognition, fuel consumption, and smoke color analysis. It also includes proper steps in cleaning, disassembling, testing, and reassembling to determine whether the engine parts are still

serviceable or need replacement. It will also focus on the use of different measuring tools and engine reconditioning equipment such as boring machine, honing machine and valve face grinder.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester: 162
NC Level : Leading to NC Level II

AT 222 : **METALLIC AND SOLID COLOR PAINTING APPLICATIONS AND TECHNIQUES**

This course deals with the use of spray painting equipment such as spray guns, paint mixers and color blenders. It also includes spray techniques, sanding and masking techniques, color blending, solid and metallic applicators to damaged surfaces, clear gloss applications and polishing.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester: 90
NC Level : Leading to NC Level I & II

AT 223 : **BASIC DRIVING**

The information and skills required in their course helps the students to become proficient and defensive driver. It will also assist students to observe traffic rules and regulation, driving calculation techniques, and road safety.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester: 72
NC Level : Leading to NC Level I & II

IIm 1 : **INDUSTRY IMMERSION 1**

This course is designed to enhance the knowledge, desirable attitudes and skills of automotive service technician in accordance with industry standards. It covers specialized competencies such as performing basic technological concepts and processes, performing occupational health safety practices, performing proper use of auto hand tools, equipment and power machines, servicing internal combustion engine, servicing body electrical system, servicing under chassis components, performing automotive body substrate preparation, managing automotive service shop servicing, repairing, and maintaining automotive engine electrical system, air-conditioning system, power train and under chassis unit,

motor cycle and small engine, and performing body repair, preventive maintenance, engine tune-up, engine rebuilding, metallic and solid color painting for damaged surfaces, and driving properly. It also includes working safety habits, housekeeping and industry.

No. of credit units : 5
No. of training hours per semester: 280

AT 311 : **BASIC POWER CONVERSION SYSTEM SERVICING, REPAIR, AND MAINTENANCE**

It deals with the knowledge and skills in servicing, repairing, and maintaining the automotive power conversion systems such as the automatic transmission, fluid clutches, torque converter, and other power converting mechanisms. It includes diagnosing, analyzing, and troubleshooting power conversion system problems.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester: 90

AT 312 : **BASIC ELECTRONIC ENGINE MANAGEMENT SYSTEM OPERATION AND SERVICING**

It deals with the knowledge and skills in servicing, repairing, and maintaining electronic engine management. This includes analysis, diagnosis and testing of sensors, engine control units, actuators, and other control devices such as switches and relays. It also includes work safety and orderliness.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester: 90

IIm2 : **INDUSTRY IMMERSION 2**

This course is designed to enhance the knowledge, desirable attitudes and skills of automotive service technician in accordance with industry standards. It covers specialized competencies such as overhauling gas and diesel engine, servicing, repairing, and maintaining power conversion system, electronic engine management, and suspension system, electrical and electronic units. It also includes working safety habits, housekeeping and industry.

No. of credit units : 10
No. of training hours per semester : 560

Course Description of Technology Majors
GARMENTS, FASHION AND DESIGN

GFD 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry and the school. It includes topics such as personal safety, safety precautions and practices, hazards anticipation, accident prevention, and administering first aid. It also develops and enhances the knowledge, skills and attitudes of students to perform this task.

No. of credit units : 1
No. of lecture hours per week : 1
No. of laboratory hours per week : none
No. of training hours per semester: 18
NC Level : Leading to NC Level 1

GFD 112 : PERSONALITY DEVELOPMENT

This course is designed to enhance the knowledge and skills of students on how to develop a desirable and pleasing personality, specifically good posture, proper hygiene, good grooming and social graces.

No. of credit units : 2
No. of lecture hours per week : 2
No. of laboratory hours per week : none
No. of training hours per semester: 36
NC Level : Leading to NC Level 1

GFD 113 : FABRIC AND GARMENT DESIGNING TECHNIQUES

This course deals with human proportions and figure construction; dress designing through line drawing and full application of colors and textile design; computation of fabric, materials and accessories consumption for different garment designs.

It also includes fabric printing which focuses on the various methods by which designs are printed on the fabric; silk screen printing which entails paper and film stenciling and fabric stamping and designing techniques.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester: 90
NC Level : Leading to NC Level 1

GFD 121 : BASIC SEWING PROCESSES

This course provides students with the knowledge on the selection and use of different garment trimmings, accessories and fasteners and how these are sewn into the garment. It also includes how to make simple sewing processes about hand stitches and handworked buttonholes.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester: 90
NC Level : Leading to NC Level 1

GFD 122 : INDUSTRIAL SEWING MACHINE OPERATION, REPAIR AND MAINTENANCE

This course deals with the knowledge of industrial equipment used in garment manufacturing; their care and maintenance, parts and functions, preparation for operation, stitch adjustments, cleaning and lubrication, trouble shooting and repair.

It also focuses on the sewing fundamentals, techniques and practices. Projects include garment construction processes such as seams, darts, tucks, pleats, gathers, facings, hems, pockets, plackets, collars and sleeves.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester: 162
NC Level : Leading to NC Level II

GFD 211 : PATTERN DRAFTING AND DESIGNING

This course deals with taking accurate body measurements, drafting block patterns, manipulation of darts, and making patterns for necklines, collars, sleeves and skirts, and interpreting garment designs into final patterns.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester: 162
NC Level : NC Level II

GFD 212 : GARMENTS DESIGNING AND CONSTRUCTION

This course deals with the basic know-how in assembling basic garment designs. The students are expected to come up with simple projects like blouse with and without collar, basic skirt, and one-piece dress.

No. of credit units	:	5
No. of lecture hours per week	:	3
No. of laboratory hours per week	:	6
No. of training hours per semester	:	162
NC Level	:	NC Level II

GFD 221 : PATTERN GRADING AND MARKER MAKING

This course deals with the construction of industrial pattern using standard body measurements, interpreting designs and their applications in the production patterns with applicable notations, and the processes involved in making manual markers.

No. of credit units	:	5
No. of lecture hours per week	:	3
No. of laboratory hours per week	:	6
No. of training hours per semester	:	162
NC Level	:	NC Level II

GFD 222 : MEN'S GARMENTS CONSTRUCTION

This course deals with different patterns and construction details in men's garments construction. Projects include assembling pajama suit, athletic pants, standard short pants, long pants and standard men's shirt.

No. of credit units	:	5
No. of lecture hours per week	:	3
No. of laboratory hours per week	:	6
No. of training hours per semester	:	162
NC Level	:	NC Level II

GFD 311 : ADVANCE GARMENTS DESIGNING AND CONSTRUCTION

This course deals with the principles and techniques in handling delicate, sheer and fine fabrics appropriate for special occasion clothes. The competencies learned from previous courses are also applied here so as to come up with more stylish couture designs.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester: 162
NC Level : NC Level III

GFD 312 : MASS PRODUCTION TECHNIQUES AND PRACTICES

This course deals with practices involved in performing mass production operations, the quality assurance measures performed in a garment industry setting, and the incoming fabric inspection down to the final inspection of the finished garment prior to delivery.

It also focuses on the optimization of the physical resources relative to the creation of goods and services. Included in the lessons are computations of worker's salary, explanation of workers' benefits and privileges, making work studies, shop layout and preparation of organizational charts, the proper way of dealing with customers and the principles involved on how to keep a client.

No. of credit units : 5
No. of lecture hours per week : 4
No. of laboratory hours per week : 3
No. of training hours per semester: 136
NC Level : NC Level IV

IIm 1 : INDUSTRY IMMERSION 1

This training program aims to develop the knowledge and skills of students and equip them with desirable work habits and attitudes while exposing them to the actual industry operations like: fabric and operational defects, fabric inspection procedures based on company standards, different industrial garment finishes, cutting opefations using straight knife and band knife machines, sewing using different machine attachments, and special machines.

The students will perform these jobs/operations while being supervised by the company personnel and the school coordinator.

No. of Credit Units : 5
No. of Training Hours Per Semester: 280
NC Level : NC Level I & II

Itm 2 : **INDUSTRY IMMERSION 2**

This training program aims to enhance the basic competencies of students learned during their initial industry immersion. The first part deals with industry operations focusing on manual pattern grading; production of standard patterns; making manual markers; time and motion study, and performing more complicated sewing procedures such as pockets, plackets or collar operations.

The latter part of the training exposes the students to high fashion wear. With the guidance of their couturier-mentor, they are expected to sketch garment designs; select fabrics, materials and accessories for their designs; compute its consumption; perform fabric draping and sewing procedures for high fashion wear; and follow correct ethics in meeting potential high fashion clients.

Though exposure to industry operations and couture wear are different in nature, the competencies they will gain from these will guide them towards selecting more applicable avenues for their talents and skills – either by putting up their own fashion shop or becoming multi-skilled industry workers.

No. of Credit Units	:	10
No. of Training Hours Per Semester:		560
NC Level	:	NC Level III & IV

Course Description of Technology Majors
DRAFTING TECHNOLOGY (DT)

DT 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry and the school. It includes topics such as personal safety, safety industry precautions and practices, hazard anticipation, accident preventions, and first aid administration. It also develops and enhances the knowledge, skills and attitudes of students to safety perform their tasks.

No. of Credit Units	:	1
No. of Lecture Hours Per Week	:	1
No. of Laboratory Hours Per Week	:	None
No. of Training Hours Per Semester	:	18

DT 112 : DRAFTING FUNDAMENTALS AND THEORY OF DESIGN

The course deals with the identification and application of the basic principles, theories and drafting fundamentals in the preparation of working drawings. It also focuses on orthographic projection, dimensioning, sectioning, scaling, notes and specifications using two methods such as freehand and mechanical drawing in the preparation of working drawings and blueprints with complete details.

No. of Credit Units	:	3
No. of Lecture Hours Per Week	:	2
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	90

DT 121 : BASIC AUTO-CAD (2-D APPLICATIONS)

This course develops the students' competency to operate the computer using the Auto-CAD in drafting. The basics of Auto-CAD command in beginning to draw, view modification, creating simple geometrical entities, drawing aids and editing and altering are the main focus of study. It emphasizes the mastery of the Auto-CAD commands.

No. of Credit Units	:	4
No. of Lecture Hours Per Week	:	2
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	144

DT 122 : MACHINE DRAFTING USING AUTO-CAD

This course deals with the preparation of working drawing of machine parts that includes its sections, special views, tolerance, complete notes and specifications and assembly drawings drawn in Auto-CAD. It focuses on two-dimensional drawing presentations.

No. of Credit Units	:	4
No. of Lecture Hours Per Week	:	2
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	144

DT 211 : AUTO-CAD 2-D AND 3-D APPLICATIONS

The course deals with the preparation of two-dimensions (2-D) and three-dimensional (3-D) drawing of machine parts, blocks and surfaces, preparing layers, moving and duplicating objects, dimensioning and labeling, creating inserting and editing blocks and W-blocks into drawing using Auto-CAD. These are important in 2-D drawing with emphasis on modifying and changing prop command. The use of 3-D surface commands like extrude, edge, surf, rule surf, and rev surf are also emphasized.

No. of Credit Units	:	5
No. of Lecture Hours Per Week	:	3
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	162

DT 212 : ARCHITECTURAL DRAFTING AND DESIGN

The course deals with designing residential, commercial and educational structures following the principles and theories on architectural design chromatic energy of architectural, plan composition, visual acuity and perception, conceptualization techniques and functional grouping and zoning.

No. of Credit Units	:	5
No. of Lecture Hours Per Week	:	3
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	162

DT 221 : BUILDING TECHNOLOGY AND UTILITIES

This course deals with designing structures of residential building integrating and applying architectural theories regarding space articulation, geometry, response to context, enclose and system, economics and human factors are

considered to integrate costing, architectural safety and socio-cultural variables.

No. of Credit Units	:	5
No. of Lecture Hours Per Week	:	3
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	162

DT 222 : CAD ARCHITECTURAL DESIGN

This course deals with the preparation of a complete plan of two storey residential house using Architectural Software program. Interiors are designed and drawn in perspective.

No. of Credit Units	:	5
No. of Lecture Hours Per Week	:	3
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	162

IIm 1 : INDUSTRY IMMERSION I

The course is designed to enhance the knowledge, skills and attitudes of a general draftsman in accordance with the industry and company standards. It concerns competencies such as performing occupational health and safety practices, fundamental theories, design and operations, operate computer using Auto-CAD in preparing mechanical drawing in 2-Dimension and 3-Dimension applications and designing residential, commercial and educational structures.

No. of Credit Units	:	5
No. of Laboratory Hours Per Week	:	45
No. of Training Hours Per Semester	:	280

DT 311 : CONSTRUCTION ESTIMATES AND SCALE MODELING

This course deals with the preparation of bill of materials of a residential house. It includes estimates of concrete, masonry, metal reinforcement, wood and lumber, roofing materials, tile works, painting and hardware, stair case and auxiliaries, scaled model is given emphasis in the course.

No. of Credit Units	:	5
No. of Lecture Hours Per Week	:	3
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	162

DT 312 : GRAPHICS/COMMERCIAL ARTS WITH COMPUTER APPLICATION

The course deals with the application of arts and design in graphics and commercial arts using a computer with the latest and available professional software. Likewise, photographic silkscreen printing, streamer painting/sign painting and stage decoration are included in the course.

No. of Credit Units	:	5
No. of Lecture Hours Per Week	:	3
No. of Laboratory Hours Per Week	:	6
No. of Training Hours Per Semester	:	162

IM 2 : INDUSTRY IMMERSION 2

This course is designed to apply the knowledge, skills and attitudes of an architectural and mechanical CAD operator, illustrators, estimator and scale modeler in accordance with the industry and company standards.

No. of Credit Units	:	10
No. of Laboratory Hours Per Week	:	35
No. of Training Hours Per Semester	:	560

Course Description of Technology Majors
WELDING AND FABRICATION TECHNOLOGY

WFT 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry. It includes topics such as personal safety, safety precautions and practices, hazards anticipation, accident prevention, and first aid administration. It also develops and enhances the knowledge, skills and attitudes of students to safety perform their tasks.

No. of credit units	:	1
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	None
No. of training hours per semester	:	18

WFT 112 : METAL TESTING AND HEAT TREATMENT PROCESSES

This course deals with metallurgical concepts and practices that influence mechanical and physical properties of metals and steels as well as the description and procedure of heat treatment process applied to welded structure.

No. of credit units	:	3
No. of lecture hours per week	:	2
No. of laboratory hours per week	:	3
No. of training hours per semester	:	90

WFT 113 : BASIC SHIELDED METAL ARC WELDING (SMAW) PROCESS

This course deals with the concepts and principles of shielded metal arc welding. It also includes the local and international welding standards under AWS DI.I and ASME IX as well as hands on training in welding plates in IF, 2F, 3F, 4F, 1G, 2G, 3G positions.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	126

WFT 121 : OXY-ACETYLENE WELDING, CUTTING AND BRAZING

This course provides a comprehensive presentation of the fundamentals of fusion welding using the combustion of

oxy-acetylene gases. It covers welding in all positions, in thin carbon steel sheets and pipes, manual and automatic cutting and brazing of non-ferrous metals.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	126

WFT 122 : ADVANCED SHIELDED METAL ARC WELDING (SMAW) PROCESS

This course deals is focused on advanced principles and techniques in welding groove joints in plates and pipes, plate welding in 3G and 4G positions and pipe welding in 2G, 5G and 6G positions using AWS D1.1 Code, ASME Code and API 1104 standards. It also emphasizes the development of knowledge, skills and attitude in the fabrication of pressure vessel which form part of manufacturing process.

No. of credit units	:	4
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	9
No. of training hours per semester	:	144

WFT 211 : GAS METAL ARC WELDING (GMAW) PROCESS

This topic provides a student with a thorough understanding of the principles, methods and techniques in gas metal arc welding process. It covers simple maintenance and trouble shooting of equipment and hands on practices using acceptable procedures codes and standard. Also, it teaches production welding in thin and thick carbon steels plates and pipes as well as welding aluminum plates in all positions.

No. of credit units	:	4
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	9
No. of training hours per semester	:	126

WFT 212 : PATTERN DEVELOPMENT

This course deals with the development of pattern needed in basic piping fabrication, geometric construction in air ducting, surface preparation and layout as well as template making.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	72

WFT 213 : FLUX-CORED ARC WELDING (FCAW) PROCESS

This course deals with the concepts, methods and techniques in Flux-Cored Arc Welding (FCAW) process. It provides the student with the necessary information and thorough hands-on practice for the development of skills and attitudes in FCAW welding of carbon steel plates and pipes.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	126
NC. Level	:	I & II

WFT 221 : GAS TUNGSTEN ARC WELDING (GTAW) PROCESS

This course deals with the principles, methods and techniques in Gas Tungsten Arc Welding (GTAW or TIG) welding process. It also covers the development of knowledge, skills and attitude in welding carbon steel plates. Plates and pipes in all positions in accordance to the welding procedure specification.

No. of credit units	:	4
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	9
No. of training hours per semester	:	144

WFT 222 : PIPE FITTING

The subject is designed to develop the knowledge, skills and attitude of students in industrial piping fabrication and installation with particular emphasis on the piping system of process plants, refinery and various transportation piping. It includes blueprint reading, piping calculations, template development for special pipe fittings and actual fabrication.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	126

IIM 1 : INDUSTRY IMMERSION 1

Give the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization.

No. of credit units	:	5
No. of training hours per semester	:	280

WFT 311 : WELDING INSPECTION AND TESTING

This subject deals with the concepts and principles of testing the quality of welds. If includes the process of destructive and non-destructive methods of inspecting welds. It also provides the student with a thorough understanding and practices of the procedure in each testing methodology.

No. of credit units	:	5
No. of lecture hours per week	:	3
No. of labdratory hours per week	:	6
No. of training hours per semester	:	162

WFT 312 : FABRICATION PROCESSES AND TECHNIQUES

This course deals with the concepts, procedure and techniques in construction or fabrication of different structures like towers, bridges, building frames and pressure vessels. It includes the actual fabrication of small water tanks, window grills, steel gates, windows, steel trusser and other welded structure or pipelines. It also include the process of laying out, cutting, drilling, bending, twisting, heat treatment, welding and finishing.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	126

WFT 313 : ADVANCED GAS TUNGSTEN ARC WELDING (GTAW) PROCESS

This course is the advanced level of Gas Tungsten Arc Welding (GTAW) process. It is designed to develop the knowledge, skills and attitudes of students in welding. The welding pipe, aluminum, stainless plates, other non-ferrous metals and alloys in all welding positions, small bore pipe, aluminum and stainless plates as well as other non-ferrous metals in all positions. All practices and hands-on training will be based on internationally accepted welding codes and standards.

No. of credit units	:	3
No. of lecture hours per week	:	1
No. of laboratory hours per week	:	6
No. of training hours per semester	:	126

IIM 2 : **INDUSTRY IMMERSION 2**

Give the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization.

No. of credit units	:	10
No. of training hours per semester	:	560

Course Description of Technology Majors
MECHANICAL TECHNOLOGY (MT)

MT 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry. It includes topics such as personal safety, safety precautions and practices, hazards anticipation, accident prevention, and first aid administration. It also develops and enhances the knowledge, skills and attitudes of students to safely perform their tasks.

No. of credit units	: 1
No. of lecture hours per week	: 1
No. of laboratory hours per week	: None
No. of training hours per semester	: 18
NC Level	: Leading to NC Level I

MT 112 : BASIC MACHINE TOOLS

This course deals with the basic operations of various machine tools used in machinery and different set-ups machine accessories, holding devices, and attachments.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level I

MT 121 : LATHE MACHINE OPERATIONS

This course deals with the different types of lathe, their accessories, attachment and work holding devices, cutting tool design and their application, cutting speeds and feeds. It involves cutting paper using different methods of tapes turning, eccentric turning and other complicated turning operations.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level II

MT 122 : METROLOGY

This course is concerned with the methods of measurements based on agreed international standards and units, metrology which requires the use of apparatus and

equipment and necessary adjustments to obtain the degree of required accuracy, and the various techniques in industrial set ups and inspections.

No. of credit units : 3
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester : 72
NC Level : Leading to NC Level I

MT 123 : HEAT TREAMENT

The course deals with the principles and processes in basic heat treatment, it also includes the properties of metal, production of metals and materials testing.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester : 72
NC Level : Leading to NC Level I

MT 124 : MILLING MACHINE OPERATIONS

This course covers the knowledge and skills required to set-up and mill work piece to drawing specifications necessary for performing milling operation such as: drilling, boring, reaming, milling block, slots and key ways, indexing splines, serrations, gears and cams.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

MT 211 : GRINDING MACHINE OPERATIONS

The course deals with the various types, grades, structure, standard shapes and applications of common wheels as well as the various types, construction principles and operations of different grinding machines.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

MT 212 : **AUTO: CAD MECHANICAL AND BLUEPRINT READING**

This course covers the skills requirement in drawing mechanical parts using Auto-CAD as well as the details on the requirement for drawing 2-D and 3-D parts.

No. of credit units	: 3
No. of lecture hours per week	: 4
No. of laboratory hours per week	: 6
No. of training hours per semester	: 180
NC Level	: Leading to NC Level II

MT 213 : **TOOL AND DIE MAKING**

This course deals with the basic heat treatment principles and processes as well as the properties and production metals and materials testing.

No. of credit units	: 2
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 9
No. of training hours per semester	: 198
NC Level	: Leading to NC Level II

MT 214 : **ADVANCE BENCHWORK**

The course deals with the principles of advanced benchwork techniques using precision tools and measurements applied in industry. It also includes the use of reaming, broaching, and lapping, tools and dies.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level II

MT 221 : **BLUEPRINT READING**

The course covers the knowledge and skills required in performing preventive and corrective maintenance such as inspection and repair of hand tools, cleaning and lubrication of machine parts and changing pulleys and belts.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level II

MT 222 : CORRECTIVE AND PREVENTIVE MAINTENANCE

The course provides the students the principles of advanced bench work techniques using precision tools and measurements applied in industry. It covers the use of reaming, broaching, lapping and tap and dies.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level II

MT 223 : APPLIED MECHANICAL MATHEMATICS

The course covers the knowledge required to calculate mathematical problems involved in the workshop the conversion of units, fraction, and decimal, ratio and proportion, basic algebraic operations, geometry, trigonometry and calculations on gears, cams, pulleys, threads and material strength.

No. of credit units	: 2
No. of lecture hours per week	: 1
No. of laboratory hours per week	: 3
No. of training hours per semester	: 126
NC Level	: Leading to NC Level II

IIM 1 : INDUSTRY IMMERSION 1

This provides the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization particularly under NC I.

No. of credit units	: 5
No. of training hours per semester	: 280

MT 311 : ELECTRICALLY DISCHARGED MACHINING (EDM)

This course deals with the principles of electric discharge machining as a non-traditional machining process of removing metal by controlled electrical arcing. The process is valued for its ability to produce complex shapes in metal of any hardness through an electric discharge machine.

No. of credit units	: 2
No. of lecture hours per week	: 1
No. of laboratory hours per week	: 3
No. of training hours per semester	: 72 hrs.
NC Level	: Leading to NC Level II

MT 312 : JIGS AND FIXTURE, TOOL AND DIE DESIGNING

Modern manufacturing processes require the proper tool guiding aids and devices for the purpose of attaining maximum production, greater ease and economy, so it is a must that the student's ability to design and plan a tool is developed to a higher degree. This subject deals with the concepts of designing jigs, fixtures, tool and die for repetitive work or mass production methods.

No. of credit units	: 2
No. of lecture hours per week,	: 1
No. of laboratory hours per week	: 3
No. of training hours per semester	: 72 hrs.
NC Level	: Leading to NC Level II

MT 313 : CAD-CAM

This course is a study of planning, programming, selecting tooling determining speed and feeds, setting up, operating and testing of CNC programs on CNC machines. Also, the student will be introduced to computer aided design and computer aided manufacturing.

No. of credit units	: 5
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 9
No. of training hours per semester	: 72 hrs.
NC Level	: Leading to NC Level II

IIM 2 : INDUSTRY IMMERSION 2

This provides the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization.

No. of credit units	: 10
No. of training hours per semester	: 560

Course Description of Technology Majors
CIVIL TECHNOLOGY (CT)

CT 111 : OCUPATIONAL HEALTH AND SAFETY

This course deals with the safety standards and procedures in the workshop as set by the industry and the school. It includes the desired knowledge, skills and attitudes toward safety in the workplace in sorting, cleaning and dispensing materials, tools and equipment, identifying and minimizing hazards, responding to and recording accidents and following basic security.

No. of credit units : 1
No. of lecture hours per week : 1
No. of laboratory hours per week : None
No. of training hours per semester : 18
NC Level : Leading to NC Level 1

CT 112 : NATIONAL BUILDING CODE IMPLEMENTATION

This course deals with the study and application of various provisions as mandated in the National Building Code of the Philippines.

No. of credit units : 2
No. of lecture hours per week : 2
No. of laboratory hours per week : None
No. of training hours per semester : 36

CT 113 : ROUGH CARPENTRY

This course deals with the study of stake-out building lines, fabricating formworks, installing formwork components, stripping formwork components and installing house framing works.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

CT 123 : ELEMENTARY SURVEYING

The course deals with the study of the principles, tools and field practices in Elementary surveying.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

CT 121 : **REBAR WORKS**

This course deals with the interpretation of rebar placement drawings, performing mathematical operation, utilizing rebar materials, using common rebar tools and equipment, fabricating rebar components, assembling rebar and installing reinforcement bars.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

CT 122 : **ROUGH MASONRY**

This course deals with the knowledge, skills and attitudes in basic masonry and concrete works. It includes study of masonry tools and materials used in mixing, pouring and paving concrete as well as laying blocks for perimeter fence, walls and partitions.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level I

CT 211 : **PLUMBING**

This course deals with the study of the materials, tools and processes in designing, fabrication and installation of plumbing pipes, fittings, and fixture.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level I & II

CT 212 : **STRENGTH OF MATERIALS**

This course deals with the study of fundamental theories and practices in structural analysis such as mechanics, centroid of an area & bar forces of building construction.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester : 72

CT 213 : **FINISHING MASONRY**

The course deals with the study of advanced theories and practices in masonry works, such as plastering, tile laying and other concrete surface finishing as well as repairs and maintenance of masonry surface.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

CT 214 : **FINISHING CARPENTRY**

The course is categorized as finish carpentry that deals with the principles, processes, techniques and trends in completing the interior and exterior part of a building. It involves cutting and installation of panels, cladding, built in cabinets, furniture, stairs, doors, windows, jambs frames and architraves.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

CT 221 : **CONSTRUCTION SURVEYING**

This course deals with the study of advanced theories and practices in construction surveying, such as leveling, topographic survey, area computation, partition of land.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

CT 222 : **CONSTRUCTION ESTIMATES**

This course deals with the study of principles, tools and field practices in elementary and higher surveying.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester : 72

CT 223 : ANALYSIS OF BUILDING STRUCTURE

This course deals with the application of theories and principles on the strength of materials. It also includes introduction to theory of structural design.

No. of credit units : 2
No. of lecture hours per week : 1
No. of laboratory hours per week : 3
No. of training hours per semester : 72

CT 224 : CONSTRUCTION PAINTING

This course deals with the study of knowledge skills and attitude in surface and material preparation and application of paint.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

CT 311 : CONSTRUCTION MANAGEMENT

This course deals with the principles and practices involved in project management Program Evaluation and Review Technique (PERT)/Critical Path Method (CPM), construction biddings, construction flow and legal aspects in construction.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

CT 312 : SOIL AND CONSTRUCTION MATERIALS TESTING

This course covers the study of tools, materials and concepts in testing soil and other construction materials which affect the design, construction and maintenance of buildings and other structures.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

IIm 1 : INDUSTRY IMMERSION 1

This training program aims to upgrade the knowledge and skills of the students by giving them the opportunity to undergo industrial training which would give them actual hands on experience of the real world of construction works.

No. of credit units : 5
No. of training hours per semester : 280

IIm 2 : INDUSTRY IMMERSION 2

This training program aims to enhance the knowledge; skills of the students to provide a managerial and supervisory activity in construction industry.

No. of credit units : 10
No. of training hours per semester : 560

Course Description of Technology Majors
FOOD AND SERVICE MANAGEMENT (FSM

FSM 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry and the school. It includes topics such as personal safety, safety precautions and practices, hazards anticipation, accident prevention, and first aid administration. It also develops and enhances the knowledge, skills and attitude of students to safely perform their tasks.

No. of credit units : 1
No. of lecture hours per week : 1
No. of laboratory hours per week : None
No. of training hours per semester : 18
NC Level : Leading to NC Level 1

FSM 112 : FOOD SELECTION AND PREPARATION

This course deals with an understanding and application of the significant concepts and principles related to food composition, major classes, structure, market forms, selection and preparation. It also includes proper selection, use and care of different kitchen tools and equipment as well as food safety, sanitation, conservation and work simplification in meal preparation.

No. of credit units : 4
No. of lecture hours per week : 2
No. of laboratory hours per week : 6
No. of training hours per semester : 144
NC Level : Leading to NC Level 1

FSM 121 : MEAL MANAGEMENT

This course deals with the principles of food service organization and management as well as personnel structure and functions in an establishment, aspects of supervision and their application in management.

No. of credit units : 4
No. of lecture hours per week : 2
No. of laboratory hours per week : 6
No. of training hours per semester : 144
NC Level : Leading to NV Level II

FSM 122 : BASIC BAKING

This course deals with the knowledge and skills in the preparation of cookies, pies, pastries and quick breads. It also includes the proper use of tools and equipment and accuracy in measuring.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

FSM 211 : ADVANCE BAKING

This course deals with the knowledge and skills in baking yeast breads, cakes and cake decorating.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

FSM 212 : FOOD PROCESSING, PACKAGING AND LABELLING

The course deals with the principles, methods and techniques of processing and preserving foods for future consumption. It also provides general information on the importance, classification, and functions of food packages and labels.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

FSM 221 : INTERNATIONAL CUISINE

This course deals with the various cuisine around the world with emphasis on Asian, Mediterranean, American and European cuisine.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

FSM 222 : QUANTITY COOKERY

This course deals with the preparation of food from family size to large quantity and the principles involved in institutional menu planning. Discussion on recipes, starting with its construction, conversion, standardization and portion control as well as the aspects of sanitation and work simplification are also included.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

IIm 1 : INDUSTRY IMMERSION 1

This course provides the opportunity to experience actual food and service management relevant to the competencies in NV Level 1,

No. of credit units	: 5
No. of training hours per semester	: 2800
NC Level	: Leading to NC Level II

FSM 311 : CAFETERIA AND CATERING MANAGEMENT

This course deals with the knowledge and skills in all aspects of cafeteria and catering management such as table set up on various styles of meal service, banquet set up using various types of table napkin folding, table skirting, waiter staffing and the duties and responsibilities of various banquet personnel. It also includes the basic phraseologies for dining personnel.

No. of credit units	: 4
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 6
No. of training hours per semester	: 144
NC Level	: Leading to NC Level II

FSM 312 : BARTENDING AND BAR SERVICE MANAGEMENT

This course involves the principles and their application bar service and bartending in such as setting up and closing the bar, procedure in bar and beverage service, wine evaluation, preparation and mixing drinks.

No. of credit units	: 4
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 6
No. of training hours per semester	: 144
NC Level	: Leading to NC Level II

IIm 2 : **INDUSTRY IMMERSION 2**

This training program provides the students opportunity to develop the competencies specified under the NC Level II.

No. of credit units	: 10
No. of training hours per semester	: 560
NC Level	: Leading to NC Level II

Course Description of Technology Majors
HEATING, VENTILATING, AIR CONDITIONING, AND REFRIGERATION TECHNOLOGY

HVACR 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the principles and procedures needed for work safety at the jobsite. This includes the proper use and care of special Personal Protective Equipment (PPE), in compliance with the existing Philippine Electrical Code (PEC), the standards set by the Occupational Safety and Health Standards (OSHS), and the Code of Practice for Refrigeration and Air Conditioning.

No. of credit units	: 1
No. of lecture hours per week	: 1
No. of laboratory hours per week	: None
No. of training hours per semester	: 18
NC Level	: Leading to NC Level 1

HVACR 112 INSTRUMENTATION AND CONTROL DEVICES

This course deals with the familiarization and use of various types of electrical and electronic controls employed in Refrigeration and Air Conditioning (RAC) systems, such as thermostatic control, overload protector, and relay, and measuring and testing instruments, such as Volt-Ohm-Milliampere (VOM) tester, clamp-on ampere meter, pressure gauge, thermometer, and sling psychrometer. This also includes the basic principles of control systems, both opened- and closed-loop type.

No. of credit units	: 2
No. of lecture hours per week	: 1
No. of laboratory hours per week	: 3
No. of training hours per semester	: 72

HVACR 113 : DOMESTIC REFRIGERATION AND AIR CONDITIONING (DOMRAC) ELECTRICAL CIRCUITS

This course deals with reading and interpreting wiring symbols and circuits of various brands of home freezers, refrigerators, and air conditioning units.

No. of credit units	: 4
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 6
No. of training hours per semester	: 144
NC Level	: Leading to NC Level 1

HVACR 121 : DOMESTIC REFRIGERATION AND AIRCONDITIONING (DOMRAC) SYSTEMS SERVICE AND MAINTENANCE

This course deals with the study of the basic principles of refrigeration, such as pressure, volume and temperature; sensible and latent heat; phase changes; components of vapor-compression refrigeration system; and refrigeration cycle. Special topics on refrigerant recovery and recycling have been added, in line with current trade practices, as outlined by the National CFC Phase-out Plan (NCPP) of the government, and the Montreal Protocol Agreement.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level 1

HVACR 122 : SOLDERING, WELDING, AND JOINING OPERATIONS

This course deals with topics that have been carefully prepared to give refrigeration and air conditioning service personnel the necessary knowledge of tubes and pipes, and joining processes. Topics include types of tubing and pipes commonly used in RAC units; methods of joining metals; preparation procedures prior to the actual joining of these tubes; flare fittings; and supplies and materials for soldering, silver brazing, and electric arc welding operations.

No. of credit units	: 4
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 6
No. of training hours per semester	: 144
NC Level	: Leading to NC Level 1

HVACR 211 : COMMERCIAL REFRIGERATION EQUIPMENT (CRE) INSTALLATION AND MAINTENANCE

This course deals with the installation and maintenance of Commercial Refrigeration Equipment (CRE) systems, focusing on their electrical and mechanical components. Emphasis is placed on the wiring circuits of grocery reach-in cabinets, vending machines, open display cases, island freezers, and the like. An added feature of this course is the National CFC Phase-out Plan of the government, in line with the Montreal Protocol Agreement.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester : 162
NC Level : Leading to NC Level II

HVACR 212 : PACKAGED AIR CONDITIONING UNIT (PACU) INSTALLATION AND MAINTENANCE

This course deals with the installation and maintenance of Packaged Air Conditioning Units (PACU), in accordance with the manufacturers' specifications. The selection of proper materials, tools, and equipment to be used in installing and maintaining these units has been given special attention. An added feature of this course is the National CFC Phase-out Plan of the government, in line with the Montreal Protocol Agreement.

No. of credit units : 4
No. of lecture hours per week : 2
No. of laboratory hours per week : 6
No. of training hours per semester : 144
NC Level : Leading to NC Level II

HVACR 221 : MOBILE REFRIGERATION AND AIR CONDITIONING

This course deals with the principles of automobile air conditioning: description, theory, principles of operation, diagnoses, servicing, repair, and maintenance. Also included are the functions of the components that make up a system; the various automatic controls used, which are of the temperature, pressure, and vacuum types; cooling capacity; electrical circuits; and bus and truck air conditioning.

No. of credit units : 4
No. of lecture hours per week : 2
No. of laboratory hours per week : 6
No. of training hours per semester : 144
NC Level : Leading to NC Level II

HVACR 222 : REFRIGERATION PLANT DESIGNING

This course deals with the proper selection and matching of equipment for residential and commercial refrigeration and air-conditioning. This also covers topics on heat transfer and their application to the determination of heat loads to be carried by the refrigeration and air-conditioning systems. This includes activities on the calculation of heat loads for refrigeration applications, both for above and below 0°C/32°F, and air-conditioning loads.

Course Description of Technology Majors
ELECTRICAL TECHNOLOGY

ET 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

It deals with the safety standards and procedures followed in the school shop and in industries as set by the industry standard organization. It is designed to enhance the knowledge, skills, values and attitudes needed for safety in the work place.

No. of credit units : 1
No. of lecture hours per week : 1
No. of laboratory hours per week : None
No. of training hours per semester : 18

ET 112 : FUNDAMENTALS OF ELECTRICITY

This course aims to familiarize students with the basic knowledge and skills in proper handling of tools, instruments and equipment. This focuses on residential wiring installation that deals with lamp control, familiarization of electrical materials, wiring methods, wiring plan, and other theoretical and practical aspects that are in conformity with the Philippine Electrical Code (PEC).

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

ET 113 : ELECTRICAL AND ELECTRONICS DEVICES

It deals with the electronic system specifically on the passive component checking, non-linear component checking and simple electronic circuit analysis, construction, and repair.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

ET 121 : ELECTRICAL WIRING SYSTEM AND DESIGN

It deals with the different wiring methods in accordance with the PEC provision. It includes planning, costing and estimating and actual wiring installation of light and auxiliary system of commercial, residential and institutional buildings and illumination design.

No. of credit units : 4
No. of lecture hours per week : 3
No. of laboratory hours per week : 3
No. of training hours per semester : 108
NC Level : Leading to NC Level II

ET 122 : SIGNAL AND COMMUNICATION SYSTEM

It deals with the installation of signal and communication equipment, layout of signal and alarm wiring circuits such as bell, buzzer, intercom, fine alarm and the like.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

ET 123 : DIRECT CURRENT MACHINES

This course deals with the principles, operation, and design of DC motor and generator. It includes troubleshooting, repair, and rewinding of the DC machines.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

ET 211 : ALTERNATING CURRENT MACHINES

This course deals with principles operation, and design of AC motor and generator. It includes troubleshooting, repairing, and rewinding of the AC machines.

No. of credit units : 4
No. of lecture hours per week : 3
No. of laboratory hours per week : 3
No. of training hours per semester : 108

ET 212 : INDUSTRIAL ELECTRONIC CIRCUITS AND DEVICES

The course deals with the solid state devices specifically on voltage and current amplifiers, circuit, isolators, electromechanical relays and solid state switches.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

ET 213 : INDUSTRIAL MOTOR CONTROLLER

It deals with the designing, installing and troubleshooting of industrial controls. Also includes manual and semi automatic motor controller.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

ET 221 : PNEUMATIC AND HYDRAULIC SYSTEM

This course deals with the installation, checking and repairing of electro-pneumatic and hydraulic components system.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

ET 222 : LOGIC CIRCUIT CONTROLLER

It deals on digital technology of the modern equipment, specifically on logic analysis through number system, logic designing, digital system, analysis and construction.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

IIm 1 : INDUSTRY IMMERSION I

This provides the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization.

No. of credit units : 5
No. of training hours per semester : 280
NC Level : Leading to NC Level I

ET 311 : PLC SYSTEM AND PROGRAMMING

This course deals with designing of programmable logic controller system. It includes installation of discreet input and output, analog input and output and programming.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

ET 312 : INDUSTRIAL PROCESS CONTROLLER

It deals with the application of the different control configuration and measurement techniques in various industries.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

ET 313 : AUTOMATION CONTROL SYSTEM

This course deals with theories and operation of different control elements used in control valves; actuator converter and various modes of control.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90

IIM 2 : INDUSTRY IMMERSION 2

Give the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization.

No. of credit units : 10
No. of training hours per semester : 560
NC Level : Leading to NC Level II

Course Description of Technology Majors
ELECTRONICS TECHNOLOGY

ETC 111 : OCCUPATIONAL HEALTH AND SAFETY PRACTICES

This course deals with the safety standards and procedures in the workshop as set by the industry. It includes topics such as personal safety, safety precautions and practices, hazards anticipation, accident prevention, and first aid administration. It also develops and enhances the knowledge, skills, and attitude of students to safely perform their tasks.

No. of credit units	: 1
No. of lecture hours per week	: 1
No. of laboratory hours per week	: None
No. of training hours per semester	: 18
NC Level	: Leading to NC Level I

ETC 112 : BASIC ELECTRONICS

This course deals with the basic electrical laws and theorems, operations and testing of various electronic components ,directed towards the construction and repair of electronic circuits and the operation utilization and testing of instruments.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level II

ETC 113 : DIGITAL ELECTRONICS

This course deals with the theories and principles of operation, practical applications, solving, and simplifying of digital electronics. Students will be introduced on the basic formula's involved in performing digital circuit assembly, such as digital number systems, Boolean algebra and equations, Karnaugh mapping and perform logic gates circuit applications which is the building block of digital system.

No. of credit units	: 3
No. of lecture hours per week	: 2
No. of laboratory hours per week	: 3
No. of training hours per semester	: 90
NC Level	: Leading to NC Level II

ETC 121 : POWER ELECTRONICS

This course covers the analysis of various circuits for power regulation and conversion, amplification, timing, and switching as applied to industry. It also deals with the conversion of variables to other phenomena and the means of indicting and registering these variables. It also includes the fundamentals of control system, transfer characteristics of process, controllers and servo system and automation.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

ETC 122 : ELECTRONICALLY-CONTROLLED DOMESTIC HOUSEHOLD APPLIANCES REPAIR AND MAINTENANCE

This involves the study of the different electronically-controlled domestic household appliances such as the following: washing machine and driers, pressure cooker, oven toaster, waffle maker, blender, coffee maker, microwave oven, electronic clock, flat iron and presses, rechargeable light, electronic controlled light, home security equipment.

It also includes the manufacturers' procedure in preparing appliances for servicing, systematic procedure in diagnosing faults based on industry standards, repairing of appliances based on service manual supplied by the manufacturer and reassembling and testing repaired appliances according to industry standards.

No. of credit units : 4
No. of lecture hours per week : 3
No. of laboratory hours per week : 3
No. of training hours per semester : 108
NC Level : Leading to NC Level II

ETC 211 : AUDIO SYSTEM REPAIR AND MAINTENANCE

This course deals with the principles of electronic communications, fundamental electronics circuits directed towards the understanding and servicing of electronic communication equipment.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester : 162
NC Level : Leading to NC Level II

ETC 212 : CELL PHONE SERVICE AND REPAIR

The course deals with the principles of wired and wireless communication system. It also deals with the proper operation, maintenance and installation of cellular phone.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

ETC 221 : VIDEO SYSTEM REPAIR AND MAINTENANCE

The course deals with the service and repair procedure of various television and monitors, diagnosing actual faults, estimating cost, part testing, replacing reassembling and testing of repaired television and monitors. It also deals with the theories and principles of operations and practical applications involving VCR, CD player and DVD player.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

ETC 222 : INSTRUMENTATION AND PROCESS CONTROL

The course deals with an understanding and application of various instruments in process control system. It includes reading, interpreting drawing, Process, Instrumentation Diagrams (PID's) and Instrument Loop Diagrams (ILD's) variety of sensors, and construction and operation of various types of transmitters and transducers used in process control system. Practice in maintenance, calibration and troubleshooting of pneumatic, electronic, microprocessor and digital control system components, fault diagnosis techniques, noise reduction techniques are emphasized.

No. of credit units	: 5
No. of lecture hours per week	: 3
No. of laboratory hours per week	: 6
No. of training hours per semester	: 162
NC Level	: Leading to NC Level II

IIM 1 : **INDUSTRY IMMERSION 1**

This provides the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization covering the NC 1 competencies.

No. of credit units : 5
No. of training hours per semester : 280
NC Level : Leading to NC Level II

ETC 311 : **INSTRUMENTATION TROUBLESHOOTING AND MAINTENANCE**

The course provides instruction and practice in maintenance, calibration and troubleshooting of pneumatic, electronic, microprocessor and digital control system components, fault diagnosis techniques, noise reduction techniques, and distributed control system (DLC), troubleshooting of loops and components.

No. of credit units : 3
No. of lecture hours per week : 2
No. of laboratory hours per week : 3
No. of training hours per semester : 90
NC Level : Leading to NC Level II

ETC 312 : **INDUSTRIAL AUTOMATION AND CONTROL ELECTRONICS**

The course deals with the theories and principles of operations and practical applications involving VCR, CD player and DVD player. Students will be introduced on the basic knowledge required in VCR, CD and DVD operations and repair.

No. of credit units : 5
No. of lecture hours per week : 3
No. of laboratory hours per week : 6
No. of training hours per semester : 162
NC Level : Leading to NC Level II

IIM 2 : **INDUSTRY IMMERSION 2**

This gives the students the opportunity to observe and practice jobs in the industry which are related to their areas of specialization particularly the competencies under NC II.

No. of credit units : 10
No. of training hours per semester : 560