

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

These are the list of specializations and their pre-requisites.

		Specialization	Number of Hours	Pre-requisite
1.	AGRI-FISHERY ARTS	Animal Production (NC II)	480 hours	
2.		Aquaculture (NC II)	320 hours	
3.		Artificial Insemination (Ruminants) (NC II)	160 hours	Animal Production
4.		Artificial Insemination (Swine) (NC II)	160 hours	Animal Production
5.		Crop Production (NC I)	320 hours	
6.		Fish Nursery Operation (NC II)	160 hours	
7.		Fish or Shrimp Grow Out Operation (Non NC)	160 hours	Aquaculture
8.		Fish Wharf Operation (NC I)	160 hours	Fish or Shrimp Grow Out Operation
9.		Food (Fish) Processing (NC II)	640 hours	
10.		Horticulture (NC II)	640 hours	
11.		Landscape Installation and Maintenance (NC II)	320 hours	Crop Production
12.		Organic Agriculture (NC II)	320 hours	Crop Production
13.		Pest Management (NC II)	320 hours	Crop Production
14.		Rice Machinery Operation (NC II)	320 hours	Crop Production
15.		Slaughtering Operation (NC II)	160 hours	Animal Production
1.	HOME ECONOMICS	Beauty/Nail Care (NC II)	160 hours	40 hours of the subject during exploratory Grade 7/8
2.		Attractions and Theme Parks (NC II)	160 hours	
3.		Bread and Pastry Production (NC II)	160 hours	
4.		Caregiving (NC II)	640 hours	40 hours of the subject during exploratory Grade 7/8
5.		Cookery (NC II)	320 hours	40 hours of the subject during exploratory Grade 7/8
6.		Dressmaking (NC II)	320 hours	
7.		Food and Beverage Services (NC II)	160 hours	
8.		Front Office Services (NC II)	160 hours	40 hours of the subject during exploratory Grade 7/8
9.		Hairdressing (NC II)	320 hours	
10.		Handicraft (Basketry, Macrame) (Non-NC)	160 hours	
11.		Handicraft (Fashion Accessories, Paper Craft) (Non-NC)	160 hours	
12.		Handicraft (Needlecraft) (Non-NC)	160 hours	
13.		Handicraft (Woodcraft, Leathercraft) (Non-NC)	160 hours	
14.		Household Services (NC II)	320 hours	40 hours of the subject during exploratory Grade 7/8
15.		Housekeeping (NC II)	160 hours	
16.		Tailoring (NC II)	320 hours	40 hours of the subject during exploratory Grade 7/8
17.		Tour Guiding Services (NC II)	160 hours	
18.		Tourism Promotion Services (NC II)	160 hours	
19.		Travel Services (NC II)	160 hours	
20.		Wellness Massage (NC II)	160 hours	

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

		Specialization	Number of Hours	Pre-requisite
1.	ICT	Computer Hardware Servicing (NC II)	320 hours	
2.		Animation (NC II)	320 hours	
3.		Computer Programming (NC IV)	320 hours	
4.		Contact Center Services (NC II)	320 hours	
5.		Illustration (NC II)	320 hours	
6.		Medical Transcription (NC II)	320 hours	
7.		Technical Drafting (NC II)	320 hours	
1.	INDUSTRIAL ARTS	Automotive Servicing (NC I)	640 hours	
2.		Carpentry (NC II)	640 hours	
3.		Consumer Electronics Servicing (NC II)	640 hours	
4.		Electrical Installation and Maintenance (NC II)	640 hours	
5.		Masonry (NC II)	320 hours	
6.		Plumbing (NC I)	320 hours	
7.		Plumbing (NC II)	320 hours	Plumbing (NC I)
8.		Refrigeration and Airconditioning Servicing (NC II)	640 hours	
9.		Shielded Metal Arc Welding (NC I)	320 hours	
10.		Shielded Metal Arc Welding (NC II)	320 hours	Shielded Metal Arc Welding (NC I)
11.		Tile Setting (NC II)	320 hours	

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING
Grade 7/Grade 8 (Exploratory)

Course Description:

This is an exploratory and introductory course that leads to a **Technical Drafting** National Certificate Level II (NC II). It covers **five (5)** common competencies that a **Grade 7/Grade 8** Technology and Livelihood Education (TLE) student ought to possess, namely: 1) use of tools and equipment; 2) maintaining tools, drawing instruments, equipment, and paraphernalia; 3) performing mensuration and calculation; 4) interpreting technical drawing and plans; and 5) practicing Occupational Health and Safety (OHS) procedures.

The preliminaries of this exploratory course include the following: 1) discussion of the relevance of the course, 2) explanation of key concepts relative to the course, and 3) exploration of career opportunities.

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
Introduction 1. Relevance of the course 2. Basic concepts in Technical Drafting 3. Career opportunities	The learners demonstrate an understanding of basic concepts and theories in Technical Drafting	The learners shall be able to demonstrate common competencies in Technical Drafting as prescribed by the TESDA Training Regulations	<i>The learners...</i> 1. Discuss the relevance of the course 2. Explain basic concepts in Technical Drafting 3. Explore opportunities for a career in Technical Drafting	
LESSON 1: PERSONAL ENTREPRENEURIAL COMPETENCIES (PECS)				
1. Assessment of Personal Entrepreneurial Competencies and Skills (PECs) vis-à-vis a practicing entrepreneur/employee 1.1 Characteristics 1.2 Attributes 1.3 Lifestyle 1.4 Skills 1.5 Traits 2. Analysis of PECs in relation to a practitioner	The learners demonstrate an understanding of one's PECs.	The learners shall be able to recognize his/her PECs and prepares an activity plan that aligns with that of a practitioner/entrepreneur in Technical Drafting	LO 1. Recognize PECs needed in Technical Drafting 1.1 Assess one's PECs: characteristics, attributes, lifestyle, skills, traits 1.2 Assess practitioner's: characteristics, attributes, lifestyle, skills, traits 1.3 Compare one's PECs with those of a practitioner/entrepreneur 1.4 Align one's PECs with those of a practitioner/entrepreneur	TLE_PECs7/8-00-1

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
LESSON 2: ENVIRONMENT AND MARKET (EM)				
<ol style="list-style-type: none"> 1. Key concepts in Environment and Market 2. Products and services available in the market 3. Differentiation of products and services 4. Customers and their buying habits 5. Competition in the market 6. SWOT Analysis 	The learners demonstrate an understanding of environment and market that relate with a career choice in Technical Drafting	The learners shall be able to generate a business idea based on the analysis of environment and market in Technical Drafting	LO 1. Generate a business idea that relates with a career choice in Technical Drafting <ol style="list-style-type: none"> 1.1 Conduct SWOT analysis 1.2 Identify the different products/services available in the market 1.3 Compare different products/services in Technical Drafting business 1.4 Determine the profile potential customers 1.5 Determine the profile potential competitors 1.6 Generate potential business idea based on the SWOT analysis 	TLE_EM7/8-00-1
LESSON 3: USE OF TOOLS AND EQUIPMENT (UT)				
<ol style="list-style-type: none"> 1. Hand tools in Technical Drafting 2. Equipment in Technical Drafting 	The learners demonstrate an understanding of hand tools and equipment in Technical Drafting	The learners shall be able to use hand tools and equipment in Technical Drafting	LO 1. Prepare hand tools and equipment in technical drafting <ol style="list-style-type: none"> 1.1 List hand tools and equipment based on job requirement 1.2 Identify appropriate hand tools and equipment 1.3 Classify hand tools and equipment according to function and task requirement 	TLE_ICTTD7/8UT-0a-1
LESSON 4: MAINTAIN HAND TOOLS, DRAWING INSTRUMENTS, EQUIPMENT AND PARAPHERNALIA (MT)				
<ol style="list-style-type: none"> 1. Safety procedures in maintaining hand tools, drawing instruments, equipment, and paraphernalia 	The learners demonstrate an understanding of concepts and principles in maintaining hand tools, drawing instruments,	The learners shall be able to maintain tools, drawing instruments, equipment, and paraphernalia	LO 1. Maintain hand tools, drawing instruments, equipment, and paraphernalia <ol style="list-style-type: none"> 1.1 Perform safety procedures in maintaining hand tools, 	TLE_ICTTD7/8MT-0b-1

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
2. Proper storage of tools 3. Procedures in cleaning, tightening and simple repair of hand tools, drawing instruments, equipment, and paraphernalia 4. Common malfunction when using hand tools, drawing instruments, equipment, and paraphernalia	equipment, and paraphernalia		drawing instruments, equipment, and paraphernalia 1.2 Follow procedures in cleaning, tightening and simple repair of hand tools, drawing instruments, equipment, and paraphernalia 1.3 Identify common malfunction (unplanned or unusual events) when using tools, drawing instruments, equipment, and paraphernalia	
5. Procedures in accomplishing forms: 5.1 Job order slips 5.2 Requisition slips 5.3 Borrower's slip 6. Requisition procedures for hand tools, drawing instruments, equipment and paraphernalia 7. Inspection procedures for hand tools, drawing instruments, equipment, and paraphernalia			LO 2. Inspect hand tools, drawing instruments, equipment, and paraphernalia received in technical drafting 2.1 Follow the standard procedures in accomplishing forms 2.2 Check the list of hand tools, drawing instruments, equipment, and paraphernalia to be requested per job requirement 2.3 Evaluate the condition of all the requested hand tools, drawing instruments, equipment, and paraphernalia for proper operation and safety	TLE_ICTTD7/8MT-0c-d-2
8. Inspection report on 8.1 Malfunctioning tools 8.2 Repair of tools 8.3 Replacement of tools 8.4 Lost tools			LO 3. Prepare an inspection report of the hand tools, drawing instruments, equipment, and paraphernalia received in technical drafting 3.1 Follow procedures in preparing an inspection report	TLE_ICTTD7/8MT-0e-3

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			to the property custodian	
LESSON 5: PERFORM MENSURATION AND CALCULATION (MC)				
1. Different measuring instruments/measuring tools 2. Appropriate measuring instruments for a particular job requirements 3. Measuring different objects or components 3.1 Geometric shapes 4. Alternative measuring tools	The learners demonstrate an understanding of concepts and principles in performing measurements and calculation	The learners shall be able to perform accurate measurements and calculation based on a given task.	LO 1. Select measuring instruments 1.1 Identify measuring tools based on the object to be measured or job requirements 1.2 Select appropriate measuring instruments according to job requirements 1.3 Interpret an object or component to be measured according to the appropriate regular geometric shapes 1.4 Use alternative measuring tools without sacrificing cost and quality of work	TLE_ICTTD7/8MC-0f-1
5. Trade Mathematics/ Mensuration 6. Four fundamental operations 6.1 Kinds of measurement 6.2 Dimensions 6.3 Ratio and proportion 6.4 Trigonometric functions 6.5 Algebraic equations 6.6 Fractions, percentages, and decimals 6.7 English to Metric Conversion (and vice versa)			LO 2. Carry out mensuration and calculation 2.1 Perform calculation needed to complete task by applying trade mathematics/mensuration 2.2 Employ different techniques in checking for accuracy of the computation	TLE_ICTTD7/8MC-0g-2
LESSON 6: PREPARE AND INTERPRET TECHNICAL DRAWING (TD)				
1. Signs and symbols used in technical drawing 2. Technical drawing data 2.1 Elevation	The learners demonstrate an understanding of concepts and principles in interpreting technical drawings	The learners shall be able to read and interpret technical drawings and work plans accurately	LO 1. Analyze signs, symbols, and data 1.1 Identify signs and symbols used in technical drawing	TLE_ICTTD7/8TD-0h-1

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
2.2 Scale measurement 2.3 Dimension 2.4 Depth 2.5 Schedule of windows and doors	and work plans		1.2 Analyze data indicated in the technical drawing	
3. Symbols of materials used in technical drawing 4. Components and assemblies used in technical plans and schematic diagram 5. Basic dimensioning and specifications requirements of a plan			LO 2. Interpret technical drawings and plans 2.1 Identify necessary materials according to the technical drawing 2.2 Recognize components, assemblies, or objects based on job requirements 2.3 Identify dimensions and specifications according to job requirements	TLE_ICTTD7/8MC-0i-2
LESSON 7: PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURE (OS)				
1. Safety procedures 2. Identification of hazards, risks and control 2.1 for users and technicians 2.2 on damaged equipment 2.3 in the environment 3. Organizational safety and health protocol 4. OHS indicators	The learners demonstrate an understanding of concepts and underlying principles of Occupational Health and Safety (OHS) in relation to health and risk hazards in the workplace	The learners shall be able to consistently observe precautionary measures and respond to risks and hazards in the workplace	LO 1. Identify hazards and risks 1.1 Follow OHS policies and procedures in identifying hazards and risks 1.2 Explain hazards and risks in the workplace 1.3 Identify hazards and risks indicators as prescribed by the manufacturer 1.4 Apply contingency measures in accordance with the OHS procedures	TLE_ICTTD7/8OS-0j-1
5. Safety regulations in the workplace 6. Methods of controlling hazards and risks 7. Disaster preparedness and management			LO 2. Evaluate and control hazards and risks 2.1 Determine the effects of hazards in the workplace 2.2 Identify the methods in controlling hazards and risks 2.3 Follow OHS procedures for	TLE_ICTTD7/8OS-0j-2

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			controlling hazards and risks	
8. OHS procedure, practices, and regulations 9. Emergency-related drills and training			LO 3. Maintain Occupational Health and Safety 3.1 Observe established procedures in responding to emergency-related drill 3.2 Fill-up OHS personal records in accordance with SOP	TLE_ICTTD7/8OS-0j-3

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING
(160 hours)

Course Description:

This is a specialization course that leads to a **Technical Drafting** National Certificate Level II (NC II). It covers five (5) core manual drafting competencies that a high school student ought to possess, namely: 1) architectural layout and details, 2) structural layout and details, 3) electrical and electronic layout and details, 4) sanitary and plumbing layout and details, and 5) mechanical layout and details.

The preliminaries of this specialization course include the following: 1) discussion of the relevance of the course, 2) explanation of key concepts relative to the course, and 3) exploration of career opportunities.

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
Introduction 1. Relevance of the course 2. Core concepts of Technical Drafting 3. Career opportunities	The learners demonstrate an understanding of basic concepts, theories, and core competencies in Technical Drafting	The learners shall be able to create/provide quality and marketable product and/or service in terms of Technical Drafting as prescribed by the TESDA Training Regulation	<i>The learners...</i> 1. Discuss the relevance of the course 2. Explain the core concepts of Technical Drafting 3. Explore job opportunities for a career in Technical Drafting	
LESSON 1: PERSONAL ENTREPRENEURIAL COMPETENCIES (PECS)				
1. Assessment of Personal Competencies and Skills (PECs) vis-à-vis a practicing entrepreneur/ employee in locality/town 1.1 Characteristics 1.2 Attributes 1.3 Lifestyle 1.4 Skills 1.5 Traits 2. Analysis of PECs in relation to a practitioner 3. Align, strengthen, and develop one's PECs based on the results	The learners demonstrate an understanding of one's PECs in Technical Drafting	The learners shall be able to recognize his/her PECs and prepare an activity plan that aligns with that of a practitioner/entrepreneur in Technical Drafting	LO 1. Recognize PECs needed in Technical Drafting 1.1 Assess one's PECs: characteristics, attributes, lifestyle, skills, traits 1.2 Assess practitioner's: characteristics, attributes, lifestyle, skills, traits 1.3 Compare one's PECs with those of a practitioner/entrepreneur 1.4 Align one's PECs with those of a practitioner/entrepreneur	TLE_PECS9-12-IO-1
LESSON 2: ENVIRONMENT AND MARKET (EM)				
1. Market (Town) 2. Key concepts of market players in the market (Competitors)	The learners demonstrate an understanding of environment and market in Technical Drafting in one's	The learners shall be able to create a business vicinity map reflective of potential Technical Drafting market in the	LO 1. Recognize and understand the market in Technical Drafting 1.1 Identify the players/	TLE_EM9-12-IO-1

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
3. Products and services available in the market	locality/town	locality/town	competitors in the town 1.2 Identify the different products/services available in the market	
4. Market (Customer) 5. Key concepts of identifying and understanding the consumer 6. Consumer Analysis through: 7.1 Observation 7.2 Interviews 7.3 FGD 7.4 Survey			LO 2. Recognize the potential customer/market in Technical Drafting 2.1 Identify the profile of potential customers 2.2 Identify the customer's needs and wants through consumer analysis 2.3 Conduct consumer/market analysis	TLE_EM9-12-IO-2
LESSON 3: DRAFTING ARCHITECTURAL LAYOUT AND DETAILS (AL)				
1. Drafting tools, materials, and equipment 2. Industry Standards and Operating Procedures 3. Architectural 3.1 Job requirements 3.2 Electrical terms and symbols 3.3 Working drawings	The learners demonstrate an understanding of concepts and principles in the preparation of architectural layout and details	The learners shall be able to prepare architectural layout and details based on established industry and/or job requirements	LO 1. Prepare architectural job requirements 1.1 Prepare tools, materials, and equipment in technical drawing 1.2 Select drawing tools, materials, and equipment in accordance with the SOP 1.3 Assess architectural job requirements based on SOP 1.4 Interpret blueprint according to architectural layout drawing/job requirements following SOP and work instructions	TLE_ICTTD9-12AL-Ia-1
4. OHS policies and procedures laws 4.1 Personal safety 4.2 Workplace hazards 4.3 Environment laws 5. Setting up drawing equipment 6. Layouting drawings and details			LO 2. Prepare and set up tools and materials for drawing 2.1 Observe OHS policies and procedures in setting-up tools and materials for drawing 2.2 Prepare drawing tools, materials, and equipment	TLE_ICTTD9-12AL-Ib-2

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			based on job requirements 2.3 Set up tools, materials, and equipment based on the job requirements	
7. Theory and concepts of site development plan 7.1 Site Plans 7.2 Azimuth 7.3 Coordinate planes 8. Title block and borders 9. Alphabet of lines 10. Lettering 11. Notes and legends of architectural plans and standards 12. Layouting, dimensioning, and scaling 13. Grading conventions and symbols			LO 3. Draft site development plan 3.1 Draw a technical description of a lot according to the approved lot survey 3.2 Draw a building footprint according to the architectural drafting standards 3.3 Draw a title block according to the architectural drafting standards 3.4 Indicate dimension lines, dimensions, and drawing titles according to architectural drafting standards	TLE_ICTTD9-12AL-Ic-e-3
14. Floor plan features 15. Floor planning scale 16. Schedule of doors and windows 17. Architectural floor symbols			LO 4. Draft floor plans 4.1 Draw walls, windows, doors, fixtures, and fittings according to architectural design standards 4.2 Draw grid and dimension lines according to architectural design standards 4.3 Use metric scale system according to the magnitude of the plan 4.4 Identify sizes of doors, walls, and rooms following the schedule Indicate letterings and labels according to the drafting	TLE_ICTTD9-12AL-If-j-4

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			standards	
18. Operational definition/ terminologies on roof plans 19. Roof parts and members 20. Architectural roof symbols 21. Sheet contents 22. Framing details			LO 5. Draft roof plans 5.1 Indicate the dimensions of the roof plan based on the floor plan 5.2 Draw roof plans according to drafting standards 5.3 Use standard architectural symbols in drafting roof plans 5.4 Layout drawings according to sheet contents 5.5 Draw framing details of roof plan according to architectural drafting standards	TLE_ICTTD9-12AL-IIa-c-5
23. Operational definition/ terminology on ceiling plans 24. Ceiling parts and members 25. Procedures in drafting ceiling plans			LO 6. Draft ceiling plans 6.1 Draw vertical heights from finish floor line to ceiling line according to architectural drafting standards 6.2 Indicate lighting fixtures and fire protection devices on the ceiling plan based on architectural drafting standards	TLE_ICTTD9-12AL-IId-f-6
26. Operational definition/ terminology of elevations and sections 27. Architectural detailing and sectioning 28. Different house views and elevations 29. Detailing techniques			LO 7. Draft elevations and sections 6.1 Draw vertical heights from grade line according to architectural drafting standards 6.2 Project offsets from right, left, and rear sides of floor plan according to architectural drafting standards	TLE_ICTTD9-12AL-IIg-i-7

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			6.3 Draw roof eaves and pitch on all elevations and sections according to architectural drafting standards 6.4 Project doors and windows in all elevations and sections 6.5 Project cross and longitudinal section views from the floor plans and elevations 6.6 Indicate various material symbols and specifications in all elevations and sections	
26. Dimensions and markings 27. Company rules and regulations 28. Re-work procedures 29. Clean-up activities 30. Housekeeping			LO 8. Submit complete drawings 8.1 Follow the SOP when submitting the completed drawing to appropriate personnel (e.g., Engineer, Architect) 8.2 Note comments and corrections for final drawings following the SOP 8.3 Integrate comments and corrections into the final drawing based on job requirements 8.4 Perform housekeeping procedures following the SOP	TLE_ICTTD9-12AL-IIj-8
LESSON 4: DRAFTING STRUCTURAL LAYOUT AND DETAILS (SL)				
1. Definition of structural terms 2. Different structures and details 3. Structural drawing standards	The learners demonstrate an understanding of concepts and principles in drafting structural layout and details	The learners shall be able to draft structural layout and details following the job requirements	LO 1. Draft foundation plans 1.1 Indicate the locations of wall footings, footings, and columns in drafting the floor plan 1.2 Draw in a larger scale details of wall footings, footings, and	TLE_ICTTD9-12SL-IIIa-b-1

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			columns	
4. Operational definition/terminology of floors and roof framing plans 5. Structural drawing standards 5.1 timber 5.2 concrete 5.3 steel 6. Structural floor plans and standards 7. Roof-framing plan standards			LO 2. Draft structural floors and roof framing plans 2.1 Draft structural floor and roof framing plans based on floor and foundation plans using timber, concrete, or steel construction 2.2 Draft structural floor and roof beams showing sizes, shapes, and detailed connections	TLE_ICTTD9-12SL-IIIc-e-2
LESSON 5: DRAFTING ELECTRICAL AND ELECTRONIC LAYOUT AND DETAILS (EL)				
1. Operational definition/terminology of electrical and electronic layout and details 2. Electrical drawing standards 3. Philippine Electrical Code 4. National Building Code 5. Fire Code	The learners demonstrate an understanding of concepts and principles in drafting electrical and electronic layout and details	The learners shall be able to draft electrical and electronic layout and details following the job requirements	LO 1. Draft electrical plans and layouts 1.1 Draft lighting and power layouts according to electrical drafting standards 1.2 Place riser diagram and circuiting symbols in electrical plans and layouts according to Electrical Code 1.3 Indicate legend and general notes according to local power service provider	TLE_ICTTD9-12EL-III f-g-1
6. Auxiliary systems equipment 7. Philippine Electrical Code 8. National Building Code 9. Fire Code			LO 2. Draft auxiliary system and layout 2.1 Layout fire alarm and protection system symbols in the auxiliary system and layout plan according to Fire Code 2.2 Layout electronic and communication devices according to electrical drafting requirements	TLE_ICTTD9-12EL-III h-j-2

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
LESSON 6: DRAFTING SANITARY AND PLUMBING LAYOUT AND DETAILS (SP)				
1. Plumbing Code 2. Plumbing fixtures and fittings 3. Plumbing symbols 4. National Building Code 5. Clean Water Act	The learners demonstrate an understanding of concepts and principles in drafting sanitary and plumbing layout and details	The learners shall be able to draft sanitary and plumbing layout and details following job requirements	LO 1. Draft water distribution system 1.1 Draft hot and cold water distribution systems according to Plumbing and Water Codes 1.2 Indicate signs and symbols according to sanitary and plumbing requirements	TLE_ICTTD9-12SP-IVa-b-1
			LO 2. Draft sanitary and storm drainage 2.1 Draw sewerage plan layout according to Plumbing Code 2.2 Draft storm drainage plan according to Plumbing Code 2.3 Draw details and symbols according to sanitary and plumbing requirements	TLE_ICTTD9-12SP-IVc-d-2
LESSON 7: DRAFTING MECHANICAL LAYOUT AND DETAILS (ML)				
1. Mechanical Code 2. National Building Code 3. Heating, ventilating, and air-conditioning (HVAC) layout standards 4. Conveyor system standards	The learners demonstrate an understanding of concepts and principles in drafting mechanical layout and details	The learners shall be able to draft mechanical layout and details following job requirements	LO 1. Draft heating, ventilating, and air-conditioning systems layout 1.1 Draft HVAC systems according to Mechanical Code 1.2 Indicate signs and symbols according to mechanical layout and detail requirements	TLE_ICTTD9-12ML-IVe-f-1
			LO 2. Draft mechanical details of conveyor system 2.1 Draw elevator, escalators, dumbwaiter, and moving ramp systems according to Mechanical Code 2.2 Draw details of mechanical	TLE_ICTTD9-12ML-IVg-h-2

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			conveyor system according to mechanical layout and detail requirements	
5. Fire Code 6. National Building Code 7. Fire protection equipment and installations			LO 3. Draft fire protection systems 3.1 Draw fire sprinkler system according to Fire Code 3.2 Draw signs and symbols of fire protection systems according to fire protection requirements	TLE_ICTTD9-12ML-IVi-j-3

K to 12 BASIC EDUCATION CURRICULUM
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INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING
(160 hours)

Course Description:

This is a specialization course that leads to a **Technical Drafting** National Certificate Level II (NC II). It covers five (5) core Computer-Aided Drawing (CAD) competencies that a high school student ought to possess, namely: 1) preparing CAD, 2) layouting structural details, 3) layouting electrical and electronic details, 4) layouting sanitary and plumbing details, and 5) layouting mechanical details.

The preliminaries of this specialization course include the following: 1) discussion of the relevance of the course, 2) explanation of key concepts relative to the course, and 3) exploration of career opportunities.

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
Introduction 1. Relevance of the course 2. Core concepts of Computer-Aided Drawing (CAD) in Technical Drafting 3. Career opportunities	The learners demonstrate an understanding of basic concepts, theories, and core CAD competencies in Technical Drafting	The learners shall be able to create/provide quality and marketable product and/or service using CAD in Technical Drafting as prescribed by the TESDA Training Regulations	<i>The learners...</i> 1. Discuss the relevance of the course 2. Explain the core concepts CAD in Technical Drafting 3. Explore job opportunities for a career in Technical Drafting	
LESSON 1: PERSONAL ENTREPRENEURIAL COMPETENCIES (PECS)				
1. Assessment of Personal Competencies and Skills (PECs) vis-à-vis a practicing entrepreneur/employee in a province 1.1 Characteristics 1.2 Attributes 1.3 Lifestyle 1.4 Skills 1.5 Traits 2. Analysis of PECs in relation to a practitioner 3. Application of PECs to the chosen business/career	The learners demonstrate an understanding of one's PECs in Technical Drafting	The learners shall be able to create a plan of action that strengthens/ further develops one's PECs in Technical Drafting	LO 1. Develop and strengthen PECs needed in Technical Drafting 1.1 Identify areas for improvement, development, and growth 1.2 Align one's PECs according to his/her business/career choice 1.3 Create a plan of action that ensures success of his/her business/career choice	TLE_PECS9-12-IO-1
LESSON 2: ENVIRONMENT AND MARKET (EM)				
1. Product development 2. Key concepts in developing a product 3. Finding value	The learners demonstrate an understanding of environment and market in Technical Drafting in one's	The learners shall be able to create a business vicinity map reflective of potential Technical Drafting market in one's	LO 1. Develop a product/ service in Technical Drafting 1.1 Identify what is of "Value" to the customer	TLE_EM9-12-IO-1

K to 12 BASIC EDUCATION CURRICULUM
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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
4. Innovation 4.1 Unique Selling Proposition (USP)	province	province	1.2 Identify the customer to sell to 1.3 Explain what makes a product unique and competitive 1.4 Apply creativity and Innovative techniques to develop marketable product 1.5 Employ a Unique Selling Proposition (USP) to the product/service	
5. Selecting a business idea 6. Key concepts in Selecting a business idea 6.1 Criteria 6.2 Techniques			LO 2. Select a business idea based on the criteria and techniques set 2.1 Enumerate various criteria and steps in selecting a business idea 2.2 Apply the criteria/steps in selecting a viable business idea 2.3 Determine a business idea based on the criteria/techniques set	TLE_EM9-12-I0-2
7. Branding			LO 3. Develop a brand for the product 3.1 Identify the benefits of having a good brand 3.2 Enumerate recognizable brands in the town/province 3.3 Enumerate the criteria for developing a brand 3.4 Generate a clear and appealing product brand	TLE_EM9-12-I0-3
LESSON 3: PREPARING COMPUTER-AIDED DRAWING (CA)				
1. Basic CAD concepts 2. Operational definition/terminologies on floors and	The learners demonstrate an understanding of concepts and underlying	The learners shall be able to prepare CAD based on established industry and/or job	LO 1. Operate CAD software and computer hardware 1.1 Identify CAD software	TLE_ICTTD9-12CA-Ia-b-1

K to 12 BASIC EDUCATION CURRICULUM
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INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
roof framing plans 3. CAD working environment 4. CAD Features 4.1 Commands 4.2 Tools 4.3 Dimensions 4.4 Hardware 4.5 Manipulations 4.6 Plotting 4.7 Editing 4.8 Attributes 4.9 Object linking and embedding 4.10 Modifications	principles in the preparation of CAD.	requirements	features according to the software provider 1.2 Explore CAD working environment 1.3 Manipulate CAD features as per job requirement	TLE_ICTTD9-12CA-Ic-j-2
5. Occupational Health and Safety (OHS) policies and procedures OHS laws 5.1 Personal safety 5.2 Workplace hazards 5.3 Environment laws 6. Title block 7. Plates 8. Scale 9. Building standards			LO 2. Prepare plan using CAD 2.1 Observe OHS policies and procedures in when preparing plan using CAD 2.2 Set up drawings according to standard drawing scale and paper size 2.3 Prepare working drawings using CAD software as per building standards	TLE_ICTTD9-12CA-IIa-j-2
LESSON 4: DRAFTING STRUCTURAL LAYOUT AND DETAILS USING CAD (LC)				
1. Definition of structural terms 2. Different structures and details 3. Structural drawing standards	The learners demonstrate an understanding of concepts and principles in drafting structural layout and details	The learners shall be able to draft structural layout and details following the job requirements	LO 1. Draft foundation plans 1.1 Indicate the locations of wall footings, footings, and columns in drafting the floor plan 1.2 Draw on a larger scale details of wall footings, footings, and columns	TLE_ICTTD9-12LC-IIIa-b-1
4. Operational definition/terminology of floors and roof framing plans			LO 2. Draft structural floors and roof framing plans 2.1 Draft structural floor and	TLE_ICTTD9-12LC-IIIc-e-2

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
5. Structural drawing standards 5.1 timber 5.2 concrete 5.3 steel 6. Structural floor plans and standards 7. Roof-framing plan standards			roof framing plans based on floor and foundation plans using timber, concrete, or steel construction 2.2 Draft structural floor and roof beams showing sizes, shapes, and detailed connections	
LESSON 5: DRAFTING ELECTRICAL AND ELECTRONIC LAYOUT AND DETAILS USING CAD (EC)				
1. Operational definition/terminology of electrical and electronic layout and details 2. Electrical drawing standards 3. Philippine Electrical Code 4. National Building Code 5. Fire Code	The learners demonstrate an understanding of concepts and principles in drafting electrical and electronic layout and details	The learners shall be able to draft electrical and electronic layout and details following the job requirements	LO 1. Draft electrical plans and layouts 1.1 Draft lighting and power layouts according to electrical drafting standards 1.2 Place riser diagram and circuiting symbols in electrical plans and layouts according to Electrical Code 1.3 Indicate legend and general notes according to local power service provider	TLE_ICTTD9-12EC-III-f-g-1
6. Auxiliary systems equipment 7. Philippine Electrical Code 8. National Building Code 9. Fire Code			LO 2. Draft auxiliary system and layout 2.1 Layout fire alarm and protection system symbols in the auxiliary system and layout plan according to Fire Code 2.2 Layout electronic and communication devices according to electrical drafting requirements	TLE_ICTTD9-12EC-IIIh-j-2
LESSON 6: DRAFTING SANITARY AND PLUMBING LAYOUT AND DETAILS USING CAD (SC)				
1. Plumbing Code 2. Plumbing fixtures and fittings 3. Plumbing symbols	The learners demonstrate an understanding of concepts and principles in	The learners shall be able to draft sanitary and plumbing layout and details following the	LO 1. Draft water distribution system 1.1 Draft hot and cold water	TLE_ICTTD9-12SC-IV-a-1

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
4. National Building Code 5. Clean Water Act	drafting sanitary and plumbing layout and details	job requirements	distribution systems according to Plumbing and Water Codes 1.2 Indicate signs and symbols according to sanitary and plumbing requirements	
			LO 2. Draft sanitary and storm drainage 2.1 Draw sewerage plan layout according to Plumbing Code 2.2 Draft storm drainage plan according to Plumbing Code 2.3 Draw details and symbols according to sanitary and plumbing requirements	TLE_ICTTD9-12SC-IVb-c-2
LESSON 7: DRAFTING MECHANICAL LAYOUT AND DETAILS USING CAD (DC)				
1. Mechanical Code 2. National Building Code 3. HVAC layout standards 4. Conveyor system standards	The learners demonstrate an understanding of concepts and principles in drafting mechanical layout and details	The learners shall be able to draft mechanical layout and details following job requirements	LO 1. Draft HVAC systems layout 1.1 Draft HVAC systems according to Mechanical Code 1.2 Indicate signs and symbols according to mechanical layout and detail requirements	TLE_ICTTD9-12DC-IVd-e-1
			LO 2. Draft mechanical details of conveyor system 2.1 Draw elevator, escalators, dumbwaiter, and moving ramp systems according to Mechanical Code 2.2 Draw details of mechanical conveyor system according to mechanical layout and detail requirements	TLE_ICTTD9-12DC-IVf-g-2

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
5. Fire Code 6. National Building Code 7. Fire protection equipment and installations			LO 3. Draft fire protection systems 3.1 Draw fire sprinkler system according to Fire Code 3.2 Draw signs and symbols of fire protection systems according to fire protection requirements	TLE_ICTTD9-12DC-IVh-i-3
8. Gas piping fittings and joints			LO 4. Draft gas piping system 4.1 Draft gas piping layout according to Mechanical Code 4.2 Draw signs and symbols according to mechanical layout and detail requirements	TLE_ICTTD9-12DC-IVj-4

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING
GLOSSARY

K to 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNICAL LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL - TECHNICAL-VOCATIONAL-LIVELIHOOD TRACK
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Code Book Legend

Sample: TLE ICTTD9-12DC-IVj-4

LEGEND		SAMPLE		DOMAIN/ COMPONENT	CODE
First Entry	Learning Area and Strand/ Subject or Specialization	Technology and Livelihood Education_Home Economics Tailoring	TLE_ICT TD 9-12	Personal Entrepreneurial Competencies	PECS
				Environment and Market	EM
				Use of Hand Tools and Equipment	UT
	Grade Level	Grade 9/10/11/12		Maintain Computer Equipment and Systems	MT
				Perform Mensuration and Calculation	MC
				Prepare and Interpret Technical Drawing	TD
Uppercase Letter/s	Domain/Content/ Component/ Topic	Drafting Mechanical Layout and Details Using CAD	DC	Practice Occupational Health and Safety Procedures	OS
				Drafting Architectural Layout and Details	AL
			-	Drafting Structural Layout and Details	SL
Roman Numeral <i>*Zero if no specific quarter</i>	Quarter	Fourth Quarter	IV	Drafting Electrical and Electronic Layout and Details	EL
				Drafting Sanitary and Plumbing Layout and Details	SP
Lowercase Letter/s <i>*Put a hyphen (-) in between letters to indicate more than a specific week</i>	Week	Week Ten	j	Drafting Mechanical Layout and Details	ML
				Preparing Computer-Aided Drawing	CA
				Drafting Structural Layout and Details Using CAD	LC
Arabic Number	Competency	Draft gas piping system	4	Drafting Sanitary and Plumbing Layout and Details Using CAD	SC
				Drafting Mechanical Layout and Details Using CAD	DC

Technology-Livelihood Education and Technical-Vocational Track specializations may be taken between Grades 9 to 12.

Schools may offer specializations from the four strands as long as the minimum number of hours for each specialization is met.

Please refer to the sample Curriculum Map on the next page for the number of semesters per ICT specialization and those that have pre-requisites. Curriculum Maps may be modified according to specializations offered by a school.

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INFORMATION AND COMMUNICATIONS TECHNOLOGY – TECHNICAL DRAFTING

SAMPLE ICT CURRICULUM MAP

No.	Grade 7/8	Grade 9	Grade 10	Grade 11	Grade 12
1	EXPLORATORY 	Computer Hardware Servicing (NC II)	4 sems		
2		Illustration (NC II)	4 sems		
3		Technical Drafting (NC II)	4 sems		
4		Contact Center Services (NC II)	4 sems		
5				Animation (NC II)	4 sems
6				Medical Transcription (NC II)	4 sems
7				Computer Programming (NC IV)	4 sems