

K TO 12 BASIC EDUCATION CURRICULUM
JUNIOR HIGH SCHOOL TECHNOLOGY AND LIVELIHOOD EDUCATION AND SENIOR HIGH SCHOOL TECHNICAL-VOCATIONAL LIVELIHOOD TRACK
INDUSTRIAL ARTS - DRIVING NC II

(160 hours)

These are the specializations and their pre-requisites. These lists should be used as reference for curriculum maps.

AGRI-FISHERY ARTS

	Specialization	Number of Hours	Pre-requisite
1.	Agricultural Crops Production (NC I)		
2.	Agricultural Crops Production (NC II) ⁺⁺	480 hours	
3.	Agricultural Crops Production (NC III)	640 hours	Agricultural Crops Production (NC II)
4.	Animal Health Care Management (NC III)	320 hours	Animal Production (NC II)
5.	Animal Production (NC II) ⁺ <i>When updated, this CG will become the following:</i> 1. Animal Production (Poultry-Chicken) (NC II); 2. Animal Production (Ruminants) (NC II); and 3. Animal Production (Swine) (NC II)	480 hours	
6.	Aquaculture (NC II)	640 hours	
7.	Artificial Insemination (Ruminants) (NC II)	160 hours	Animal Production (NC II)
8.	Artificial Insemination (Swine) (NC II)	160 hours	Animal Production (NC II)
9.	Agricultural Crops Production (NC I)	320 hours	
10.	Fish Capture (NC II) ⁺⁺	640 hours	
11.	Fishing Gear Repair and Maintenance (NC III)	320 hours	
12.	Fish-Products Packaging (NC II)	320 hours	
13.	Fish Wharf Operation (NC I)	160 hours	
14.	Food (Fish) Processing (NC II)	640 hours	
15.	Horticulture (NC II) ⁺	640 hours	
16.	Horticulture (NC III)	640 hours	Horticulture (NC II)
17.	Landscape Installation and Maintenance (NC II)	320 hours	Agricultural Crops Production (NC I)
18.	Organic Agriculture (NC II)	320 hours	Agricultural Crops Production (NC I)
19.	Pest Management (NC II)	320 hours	Agricultural Crops Production (NC I)
20.	Rice Machinery Operation (NC II)	320 hours	Agricultural Crops Production (NC I)
21.	Rubber Processing (NC II)	320 hours	
22.	Rubber Production (NC II)	320 hours	
23.	Slaughtering Operation (NC II)	160 hours	Animal Production (NC II)

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HOME ECONOMICS

	Specialization	Number of Hours	Pre-requisite
1.	Attractions and Theme Parks (NC II)	160 hours	
2.	Barbering (NC II)	320 hours	
3.	Bartending (NC II)	320 hours	
4.	Beauty/Nail Care (NC II)	160 hours	40 hours of the subject during exploratory Grade 7/8
5.	Bread and Pastry Production (NC II)	160 hours	
6.	Caregiving (NC II)	640 hours	40 hours of the subject during exploratory Grade 7/8
7.	Commercial Cooking (NC III)	320 hours	Cookery (NC II)
8.	Cookery (NC II)	320 hours	40 hours of the subject during exploratory Grade 7/8
9.	Dressmaking (NC II)	320 hours	40 hours of the subject during exploratory Grade 7/8
10.	Events Management Services (NC III)	320 hours	
11.	Fashion Design (Apparel) (NC III)	640 hours	Dressmaking (NC II) or Tailoring (NC II)
12.	Food and Beverage Services (NC II) ⁺	160 hours	
13.	Front Office Services (NC II)	160 hours	40 hours of the subject during exploratory Grade 7/8
14.	Hairdressing (NC II)	320 hours	
15.	Hairdressing (NC III)	640 hours	Hairdressing (NC II)
16.	Handicraft (Basketry, Macrame) (Non-NC)	160 hours	
17.	Handicraft (Fashion Accessories, Paper Craft) (Non-NC)	160 hours	
18.	Handicraft (Needlecraft) (Non-NC)	160 hours	
19.	Handicraft (Woodcraft, Leathercraft) (Non-NC)	160 hours	
20.	Housekeeping (NC II) ⁺	160 hours	
21.	Local Guiding Services (NC II)	160 hours	
22.	Tailoring (NC II)	320 hours	40 hours of the subject during exploratory Grade 7/8
23.	Tourism Promotion Services (NC II)	160 hours	
24.	Travel Services (NC II)	160 hours	
25.	Wellness Massage (NC II)	160 hours	

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INDUSTRIAL ARTS

	Specialization	Number of Hours	Pre-requisite
1.	Automotive Servicing (NC I) ⁺	640 hours	
2.	Automotive Servicing (NC II)	640 hours	Automotive Servicing (NC I)
3.	Carpentry (NC II)	640 hours	
4.	Carpentry (NC III)	320 hours	Carpentry (NC II)
5.	Construction Painting (NC II)	160 hours	
6.	Consumer Electronics Servicing (NC II) ⁺	640 hours	
7.	Domestic Refrigeration and Airconditioning (DOMRAC) Servicing (NC II)	640 hours	
8.	Driving (NC II)	160 hours	
9.	Electrical Installation and Maintenance (NC II)	640 hours	
10.	Electric Power Distribution Line Construction (NC II)	320 hours	Electrical Installation and Maintenance (NC II)
11.	Electronic Products Assembly and Servicing (NC II) ⁺⁺ <i>(CG under construction based on Consumer Electronics Servicing (NC II) CG)</i>	640 hours	
12.	Furniture Making (Finishing) (NC II) ⁺	480 hours	
13.	Instrumentation and Control Servicing (NC II)	320 hours	Electronic Products Assembly and Servicing (EPAS) (NC II)
14.	Gas Metal Arc Welding (GMAW) (NC II)	320 hours	Shielded Metal Arc Welding (SMAW) (NC II)
15.	Gas Tungsten Arc Welding (GTAW) (NC II)	320 hours	Shielded Metal Arc Welding (GMAW) (NC II)
16.	Machining (NC I) ⁺⁺	640 hours	
17.	Machining (NC II)	640 hours	Machining (NC I)
18.	Masonry (NC II)	320 hours	
19.	Mechatronics Servicing (NC II)	320 hours	Consumer Electronics Servicing (NC II)
20.	Motorcycle/Small Engine Servicing (NC II)	320 hours	
21.	Plumbing (NC I)	320 hours	
22.	Plumbing (NC II)	320 hours	Plumbing (NC I)
23.	Refrigeration and Air-Conditioning (Packaged Air-Conditioning Unit [PACU]/Commercial Refrigeration Equipment [CRE]) Servicing (NC III)	640 hours	Domestic Refrigeration and Airconditioning (DOMRAC) Servicing (NC II)
24.	Shielded Metal Arc Welding (NC I)	320 hours	
25.	Shielded Metal Arc Welding (NC II)	320 hours	Shielded Metal Arc Welding (NC I)
26.	Tile Setting (NC II)	320 hours	
27.	Transmission Line Installation and Maintenance (NC II)	640 hours	Electrical Installation and Maintenance (NC II)

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INFORMATION, COMMUNICATIONS AND TECHNOLOGY (ICT)

	Specialization	Number of Hours	Pre-requisite
1.	Animation (NC II)	320 hours	
2.	Broadband Installation (Fixed Wireless Systems) (NC II)	160 hours	1. Telecom OSP and Subscriber Line Installation (Copper Cable/POTS and DSL) (NC II) 2. Telecom OSP Installation (Fiber Optic Cable) (NC II)
3.	Computer Hardware Servicing (NC II) ⁺	320 hours	
4.	Computer Programming (NC IV) ⁺ <i>When updated, this CG will become the following:</i> 1. Programming (.net Technology) (NC II) ⁺⁺ 2. Programming (Java) (NC II) ⁺⁺ 3. Programming (Oracle Database) (NC II) ⁺⁺	320 hours	
5.	Computer System Servicing (NC II) ⁺⁺ <i>(CG under construction based on Computer Hardware Servicing (NC II) CG)</i>	320 hours	
6.	Contact Center Services (NC II)	320 hours	
7.	Illustration (NC II)	320 hours	
8.	Medical Transcription (NC II)	320 hours	
9.	Technical Drafting (NC II)	320 hours	
10.	Telecom OSP and Subscriber Line Installation (Copper Cable/POTS and DSL) (NC II)	320 hours	Computer Hardware Servicing (NC II)
11.	Telecom OSP Installation (Fiber Optic Cable) (NC II)	160 hours	Telecom OSP and Subscriber Line Installation (Copper Cable/POTS and DSL) (NC II)

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Course Description:

This course is designed to equip the individual with the desirable attitudes and skills of the land transport light vehicle driver in accordance with industry standards, including the regulatory requirements issued by appropriate regulatory bodies, government and/or private. It covers the following four (4) core competencies: carrying out vehicle maintenance and servicing, driving light vehicles, obeying and observing traffic rules and regulations, and implementing and coordinating accident/emergency procedures.

This course is also designed to equip the individual with the basic and common knowledge, skills and attitudes of the land transport light vehicle driver in accordance with industry standards. The basic competency will be integrated in delivering the common and core competency. This course will lead to National Certificate II (Driving Light Vehicle NC II).

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
<p>Introduction</p> <ol style="list-style-type: none"> 1. Basic concepts in driving light vehicle. 2. Relevance of the course 3. Career opportunities 	<p>The learner demonstrates an understanding of the basic concepts and underlying theories and principles in driving light vehicle.</p>	<p>The learner independently demonstrates common competencies in driving light vehicle by TESDA Training Regulations.</p>	<ol style="list-style-type: none"> 1. Explain basic concepts in driving light vehicle. 2. Discuss the relevance of the course 3. Explore career opportunities in driving light vehicle. 	
PERSONAL ENTREPRENEURIAL COMPETENCIES (PECS)				
<ol style="list-style-type: none"> 1. Assessment of Personal Entrepreneurial Competencies and Skills (PECS) vis-à-vis a practicing entrepreneur/employee <ol style="list-style-type: none"> 1.1 Characteristics 1.2 Attributes 1.3 Lifestyle 1.4 Skills 1.5 Traits 2. Analysis of one's PECS 	<p>The learner demonstrates an understanding of one's Personal Entrepreneurial Competencies and Skills (PECS).</p>	<p>The learner recognizes his/her Personal Entrepreneurial Competencies and Skills (PECS) and prepares a list of PECS of a practitioner/entrepreneur in driving light vehicle.</p>	<p>LO 1. Recognize Personal Entrepreneurial Competencies and Skills (PECS) needed in driving.</p> <ol style="list-style-type: none"> 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 that of a practitioner /entrepreneur 	<p>TLE_PECS9-12-00-1</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
ENVIRONMENT AND MARKET (EM)				
<ol style="list-style-type: none"> 1. Key concepts of Environment and Market 2. Products & 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 learner demonstrates an understanding of the concepts environment and market and how they relate to a career choice in driving light vehicle.	The learner independently generates a business idea based on the analysis of environment and market in driving light vehicle.	<p>LO 1. Generate a business idea that relates with a career choice in driving light vehicle.</p> <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 the carpentry business 1.4 Determine profile of potential customers 1.5 Determine profile of potential competitors 1.6 Generate potential business ideas based on the SWOT analysis 	TLE_EM9-12-00-1
COMMON COMPETENCIES				
LESSON 1: APPLYING APPROPRIATE SEALANT/ADHESIVE (AAS)				
<ul style="list-style-type: none"> • Use of sealant and adhesive • Types and classification of sealant and adhesives • Procedure in checking sealant/adhesive 	The learner demonstrates an understanding of concepts and underlying principles in applying appropriate sealant/adhesive.	The learner independently performs application of appropriate sealant/adhesive based on service manual.	<p>LO 1. Identify appropriate sealant/adhesive.</p> <ol style="list-style-type: none"> 1.1 Identify appropriate sealant and adhesives. 1.2 Select sealant/adhesive in line with job requirements and manufacturers specification. 1.3 Perform sealant/adhesive checking to ensure the product is fit for use. 1.4 Apply work safety procedures. 	TLE_IADRV9-12AAS-Ia-1

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
<ul style="list-style-type: none"> • Types of surface material and appropriate sealant/adhesive to be used. • Techniques and procedures in preparing surfaces for sealant/adhesive. • Safety in preparing different surfaces. 			<p>LO 2. Prepare surface for sealant/adhesive application.</p> <p>2.1 Identify the types of sealant and adhesives according to surface.</p> <p>2.2 Identify surface materials as per construction.</p> <p>2.3 Clean surface and free of moisture, dust and other foreign matters to ensure maximum adhesion or seal.</p> <p>2.4 Observe safety while performing job.</p>	<p>TLE_IADRV9-12AAS-Ia-2</p>
<ul style="list-style-type: none"> • Use of sealant and adhesive • Types and classification of sealant and adhesives • Tools and materials to be used in applying sealant/adhesive • Techniques in applying sealant/adhesive • Safety requirements in applying sealant/adhesive • Hazards and risk associated with use of sealant/adhesive. 			<p>LO 3. Apply sealant/adhesive evenly.</p> <p>3.1 Apply sealant/adhesive evenly on the surface in line with manufacturer's specification.</p> <p>3.2 Removed excess sealant/adhesive by sanding or by scrapping.</p> <p>3.3 Apply sealant/adhesive using tools and equipment appropriate to job requirements.</p> <p>3.4 Observe safety and wear PPE in accordance with industry SOP.</p> <p>3.5 Identify hazards associated with the use of sealant and adhesives.</p>	<p>TLE_IADRV9-12AAS-Ia-3</p>
<ul style="list-style-type: none"> • Sealant/adhesive storing procedures. • Waste disposal standard procedures. • Hazards associated with environment due to improper waste disposal. 			<p>LO 4. Store unused and dispose used sealant/adhesive.</p> <p>4.1 Store sealant/adhesive as per prescribed procedure.</p> <p>4.2 Dispose waste as per workshop SOP.</p> <p>4.3 Observe safe handling of sealant/adhesive.</p>	<p>TLE_IADRV9-12AAS-Ia-4</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
LESSON 2: MOVING AND POSITIONING VEHICLE (MPV)				
<ul style="list-style-type: none"> • Safety in driving sign and symbols • Engine system check up procedures. • Tire inflation pressure specification. • Belt tension checking procedures. • Driver's code and conduct. • BLOBAGS 	The learner demonstrates an understanding of concepts and underlying principles in moving and positioning vehicle.	The learner independently performs moving and positioning vehicle based on the specific guidelines from manufactures manual.	LO 1. Prepare the vehicle for driving. 1.1 Perform correct check-up procedures of engine system. 1.2 Check tire inflation pressures according to manufacturer's specification. 1.3 Check braking system and fluid level. 1.4 Check engine belt tension and other necessary units in accordance with manual. 1.5 Check lighting system according to established procedures.	TLE_IADRV9-12MPV-Ib-5
<ul style="list-style-type: none"> • Types of vehicle • Driving procedure and techniques <ul style="list-style-type: none"> - Manual Transmission - Automatic Transmission • Starting an engine. • Shifting gears. • Steering vehicle. • Brake application. • Driving skills. • Parking safety and technique 			LO 2. Move and Position Vehicle. 2.1 Identify or select vehicle to be move or reposition as per job requirements. 2.2 Drive vehicle safely to the designated location according to job specification. 2.3 Park vehicle properly following safety procedures and techniques.	TLE_IADRV9-12-MPV-Ic-d-6
<ul style="list-style-type: none"> • Vehicle safe position • Oil level • Brake fluid level • Battery electrolytes • Tire pressure • Clutch fluid • Position of driving gear • Lighting and warning 			LO 3. Check the vehicle. 3.1 Check vehicle position as per requirement. 3.2 Perform check up procedures upon parking. 3.3 Check vehicle for external damage.	TLE_IADRV9-12MPV-Ie-7

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
<ul style="list-style-type: none"> • devices • Types of vehicle external damages 				
LESSON 3: PERFORMING MENSURATION AND CALCULATION (PMC)				
<ul style="list-style-type: none"> • Types of measuring instruments and applications. • Reading skills of measuring instrument • Techniques in measuring parts/components. 	<p>The learner demonstrates an understanding of concepts and underlying principles in performing measurements and calculations.</p>	<p>The learner independently performs mensuration and calculation based on job requirements.</p>	<p>LO 1. Select Measuring Instrument.</p> <ul style="list-style-type: none"> 1.1 Identify object or component to be measured. 1.2 Obtain correct specifications from relevant source. 1.3 Select appropriate measuring instrument as per job requirement. 	<p>TLE_IADRV9-12PMC-If-8</p>
<ul style="list-style-type: none"> • Conversion of units of measurement from English-metric and vice versa. • Techniques in determining tolerance/allowance of parts/components. • Calibration and using testing instruments. • Solving problems using formulas. • Finding areas of different geometrical figures. 			<p>LO 2. Carry out measurement and calculation.</p> <ul style="list-style-type: none"> 2.1 Select measuring tools in line with job requirements. 2.2 Obtain accurate measurements. 2.3 Perform calculations needed to complete work/task using fundamental operation of mathematics. 2.4 Check correct and accurate numerical computation. 	<p>TLE_IADRV9-12PMC-If-g-9</p>
<ul style="list-style-type: none"> • Safe handling and caring of measuring instruments. • Calibrating measuring instrument. • Safe handling and procedures in using measuring instruments. • Storing of measuring 			<p>LO 3. Maintain measuring instrument.</p> <ul style="list-style-type: none"> 3.1 Clean measuring instruments before and after using. 3.2 Keep measuring instruments in safe dry place. 3.3 Observe proper techniques in using precise instrument in accordance with the manufacturer’s standards. 	<p>TLE_IADRV9-12PMC-Ig-10</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
instruments.			3.4 Observe proper handling of measuring instruments in accordance with industry standards.	
LESSON 4: READING, INTERPRETING AND APPLYING SPECIFICATIONS AND MANUAL (RIA)				
<ul style="list-style-type: none"> Types of manuals used in automotive industry. Identifying appropriate manuals. Knowledge and techniques in accessing data and specification as per job requirements. 	The learner demonstrates an understanding of concepts and underlying theories and principles in interpreting manuals of specifications in automotive.	The learner independently reads, interprets and applies specification and manual as per job requirements.	LO 1. Identify and access manual/ specifications. 1.1 Identify and access appropriate manuals as per job requirement. 1.2 Check version and date of manual to ensure correct specification and identify procedures.	TLE_IADRV9-12RIA-Ih-11
<ul style="list-style-type: none"> Procedure / techniques in interpreting data and specifications. Identification of symbols used in the manuals. Identification of units of measurements. 			LO 2. Interpret manuals 2.1 Locate relevant sections, chapters of manuals/ specifications in relations to the work to be conducted. 2.2 Interpret information and procedure in the manual in accordance to industry practices.	TLE_IADRV9-12RIA-Ih-12
<ul style="list-style-type: none"> Interpreting appropriate data and specifications. Applying data and specification accessed from the manuals as required in the given task. 			LO 3. Apply information accessed in the manual. 2.1 Interpret data and specification according to job requirement. 2.2 Identify work steps correctly in accordance with manufacturer's specification. 2.3 Apply manual data according to the given task. 2.4 Interpret all correct sequence and adjustment in accordance with information contained on the manual or specification.	TLE_IADRV9-12RIA-Ih-13

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<ul style="list-style-type: none"> • Techniques in storing manuals. • Procedures in maintaining manuals. 			<p>LO 4. Store manual.</p> <p>3.1 Store manuals appropriately to ensure prevention of damage.</p> <p>3.2 Store manuals properly for easy access and ready for updating of information required in the given task.</p>	<p>TLE_IADRV9-12RIA-Ih-14</p>
LESSON 5: USING AND APPLYING LUBRICANT/COOLANT (UAL)				
<ul style="list-style-type: none"> • Lubrication schedules • Uses of coolants • Properties of lubricant and coolant • Types of lubricant and application • Hazards associated with lubricants. 	<p>The learner demonstrates an understanding of basic concept in using and applying lubricant/coolant.</p>	<p>The learner independently performs the application of lubricant/coolant based on service manuals.</p>	<p>LO 1. Identify types of lubricants/coolant.</p> <p>1.1 Access and interpret correct information on lubrication schedule from appropriate manufacturer’s specifications manual.</p> <p>1.2 Identify type and quantity of lubricants/coolant as per job requirements.</p>	<p>TLE_IADRV9-12UAL-Ii-15</p>
<ul style="list-style-type: none"> • Lubrication schedule • Tools and application for coolant and lubricant application • Hazards associated with lubricant • Lubrication procedure • Techniques in handling lubricants • Personal safety procedures • Use and care of tools and equipment • Techniques in applying coolant/lubricant • Hazards of coolant/lubricant in the environment 			<p>LO 2. Use and apply lubricants/coolant</p> <p>2.1 Identify correct procedure for change of lubricant following manufacturer’s specification or manual.</p> <p>2.2 Select and use correct tools and equipment in line with job requirements.</p> <p>2.3 Remove and replaced existing lubricants with specified types and quantity of new materials in line with manufacturer’s specification.</p> <p>2.4 Observe safe procedure and use of PPE when removing or replacing lubricant.</p> <p>2.5 Dispose used lubricants in accordance with environmental guidelines.</p> <p>2.6 Check work in line with company SOP.</p>	<p>TLE_IADRV9-12UAL-Ii-16</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
<ul style="list-style-type: none"> • Proper disposal of coolant and lubricants 				
<ul style="list-style-type: none"> • Workshop policy and procedure • Maintenance and storage of shop cleaning equipment • Use and storage of cleaning chemicals • Shop safety practices • Housekeeping practices • 5S 			<p>LO 3. Perform housekeeping activities</p> <p>3.1 Store tools, equipment and materials properly as per company SOP.</p> <p>3.2 Free workplace from waste materials.</p>	<p>TLE_IADRV9-12UAL-Ii-17</p>
LESSON 6: PERFORMING SHOP MAINTENANCE (PSM)				
<ul style="list-style-type: none"> • Workshop policies • Types and usage of cleaning chemicals/agents • Safe handling of equipment and tools. • Service procedures • Equipment maintenance standards. • Procedures and techniques in cleaning work area 	<p>The learner demonstrates an understanding of concepts and underlying principles in performing shop maintenance.</p>	<p>The learner independently performs shop maintenance in accordance with OHS (occupational health and safety) procedures.</p>	<p>LO 1. Inspect and clean tools, equipment and work area.</p> <p>1.1 Inspect and clean tools, equipment and the work area, free from dust, grease and other substances.</p> <p>1.2 Observe cleaning solvent used as per workshop cleaning requirements.</p> <p>1.3 Check and clean work area.</p> <p>1.4 Keep dry wet surface or spot in the work area.</p>	<p>TLE_IADRV9-12PSM-Ij-18</p>
<ul style="list-style-type: none"> • Safe storing of tools and equipment • Storage and disposal of hazardous/flammable tools/materials. • Personal safety procedures. • Relevant technical 			<p>LO 2. Store/arrange tools and shop equipment.</p> <p>2.1 Arrange and store tools and equipment in their respective shelves/location.</p> <p>2.2 Post visible corresponding labels.</p> <p>2.3 Secure and log tools in the record book.</p>	<p>TLE_IADRV9-12PSM-Ij-19</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
information on tools and equipment <ul style="list-style-type: none"> • Labeling procedures • Principles of total quality management (TQM) and 5S 				
<ul style="list-style-type: none"> • Use PPE in handling automotive waste materials • Effects of automotive wastes to men and its environment. • Waste management and disposal • Recording of automotive waste materials • Cleaning chemicals for grease and lubricants • Labeling procedures and technique 			LO 3. Dispose waste and used lubricants. 3.1 Dispose waste and used lubricants in accordance with the standard operational procedures and environmental regulations. 3.2 Label containers for waste and used lubricants properly. 3.3 Observe personal safety in disposing waste and used lubricants.	TLE_IADRV9-12PSM-Ij-20
<ul style="list-style-type: none"> • Conducting inventory and preparing records. • Maintenance and safe handling of tools and equipment • Maintenance and updating of records and reports. 			LO 4. Report damaged tools/equipment. 4.1 Maintain complete inventory of tools and equipment. 4.2 Identify damaged tools/equipment with repair recommendation. 4.3 Prepare reports on damaged tools/equipment.	TLE_IADRV9-12PSM-Ij-21

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INDUSTRIAL ARTS - DRIVING NC II
(160 hours)

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
CORE COMPETENCIES				
LESSON 7: CARRYING OUT MINOR VEHICLE MAINTENANCE AND SERVICING (CMV)				
<ul style="list-style-type: none"> • Parts and function of light vehicle • Cleaning materials • Relevant OHS and proper disposal of wastes • Care and use of cleaning tools and equipment 	<p>The learner demonstrates an understanding of concepts and underlying principles of carrying out minor vehicle maintenance and servicing.</p>	<p>The learner independently performs minor vehicle maintenance and servicing based on service manuals.</p>	<p>LO 1. Clean vehicle unit.</p> <p>1.1 Clean vehicle as per prescribed procedures using appropriate cleaning supplies, tools/ equipment and according to occupational health and safety (OHS).</p> <p>1.2 Dispose waste as per relevant ordinance, rules or law.</p>	<p>TLE_IADRV9-12CMV-IIa-c-22</p>
<ul style="list-style-type: none"> • Parts of vehicle and its functions • Basic principles of operation of vehicle system such as electrical system, fuel system, cooling system, steering system, exhaust system, brakes system, clutch system, air intake system, lubricating system, and wheels tires. • Routine service and maintenance of light vehicle <ul style="list-style-type: none"> - Topping up of water/coolant levels and brake fluid - Change/topping up of engine oils - Checking tire pressure - Topping up of transmission fluid - Cleaning of battery 			<p>LO 2. Maintain and service the vehicle system.</p> <p>2.1 Undertake minor routine checks based on manufacturer’s manual.</p> <p>2.2 Undertake minor routine repair in accordance with occupational health and safety procedures and manufacturer's manual.</p> <p>2.3 Undertake minor servicing in accordance with occupational health and safety procedures and manufacturer's manual.</p> <p>2.4 Undertake appropriate action in accordance with manufacturer's specifications.</p> <p>2.5 Identify complex repair and service requirements following service manual.</p> <p>2.6 Refer complex repair and service requirements following service manual.</p> <p>2.7 Keep records of routine servicing, maintenance and repairs in accordance with workplace procedures.</p> <p>2.8 Update records of routine servicing, maintenance and repairs in accordance with workplace procedures.</p>	<p>TLE_IADRV9-12CMV-IIc-j-23</p>

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(160 hours)

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
terminals - Screen wash fluid - Top-up steering fluid - Replacing air filter - Check brake components - Tire replacement/rotation				
LESSON 8: DRIVING LIGHT VEHICLE (DLV)				
<ul style="list-style-type: none"> • Pre starting warm up procedures • Inspection of vehicle safety devices and tools • LTO/LTFRB safety requirements 	The learner demonstrates an understanding of driving light vehicles.	The learner independently performs driving of light vehicles based on LTO/LTFRB regulations.	LO 1. Perform light vehicle pre starting and warm-up. 1.1 Inspect vehicle safety devices and tools as per manufacturer's specification in accordance with LTO/LTFRB requirements. 1.2 Perform pre-starting warm-up in accordance with manufacturer's manual.	TLE_IADR9-12DLV-IIIa-c-24
<ul style="list-style-type: none"> • Traffic authorities and violations • Motoring tips • Driving hazards • Right parking and shutting down (light vehicle) the engine. 			LO 2. Drive light vehicle. 2.1 Perform driving in accordance with traffic rules and regulations. 2.2 Identify driving hazard through defensive driving. 2.3 Control driving hazard through defensive driving. 2.4 Transport passenger and loads as per LTO/LTFRB regulation. 2.5 Acquire clearance permit as per LTO/LTFRB regulation. 2.6 Park light vehicle in accordance with traffic regulations. 2.7 Switch off engine of light vehicle in accordance with manufacturer's specification.	TLE_IADR9-12DLV-IIIId-j-IVa-b-25

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INDUSTRIAL ARTS - DRIVING NC II
(160 hours)

CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
<ul style="list-style-type: none"> • Minor routine repair and servicing <ul style="list-style-type: none"> - Blown bulbs in vehicle lights - Broken fan belt - Blown fuse - Broken side mirrors - Tires - Worn-out wheel caps - Spark plug and cables - Wiper blades • Diagnosis of vehicle malfunctions • Maintenance and updating of vehicle record 			<p>LO 3. Monitor and maintain vehicle performance.</p> <p>3.1 Perform routine vehicle maintenance.</p> <p>3.2 Identify vehicle malfunctions by appropriate person in accordance with the manufacturer's instruction.</p> <p>3.3 Repair vehicle malfunctions by appropriate person in accordance with the manufacturer's instruction.</p> <p>3.4 Maintain vehicle records in accordance with workplace procedure.</p> <p>3.5 Update vehicle records in accordance with workplace procedure.</p>	<p>TLE_IADRV9-12DLV-IVc-e-26</p>
LESSON 9: OBEYING AND OBSERVING TRAFFIC RULES AND REGULATIONS (OOT)				
<ul style="list-style-type: none"> • Traffic Lights • Road signs and markers <ul style="list-style-type: none"> - Warning signs - Regulatory Signs - Mandatory Signs - Informative Signs 	<p>The learner demonstrates an understanding of concepts and underlying principles in obeying and observing traffic rules and regulations.</p>	<p>The learner independently performs obeying and observing traffic rules and regulations based on LTO/LTFRB regulations.</p>	<p>LO 1. Observe traffic signs and markers.</p> <p>1.1 Identify traffic signs and road markers in accordance with concerned traffic authorities.</p> <p>1.2 Follow traffic signs and road markers in accordance with concerned traffic authorities.</p>	<p>TLE_IADRV9-12OOT-IVf-27</p>
<ul style="list-style-type: none"> • Traffic rules and regulation • Driving permit and other relevant documents • Driving outfit/attire 			<p>LO 2. Obey traffic rules and regulations.</p> <p>2.1 Identify traffic rules and regulations in accordance with concerned traffic authorities.</p> <p>2.2 Follow/obey traffic rules and regulations in accordance with concerned traffic authorities.</p> <p>2.3 Maintain license and registration as</p>	<p>TLE_IADRV9-12OOT-IVg-28</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
			<p>prescribed by law.</p> <p>2.4 Wear driver outfit/attire as prescribed by law.</p>	
<ul style="list-style-type: none"> • Managing conflict • Interpersonal skill • Driver’s code of ethics 			<p>LO 3. Practice road courtesy.</p> <p>3.1 Demonstrate positive work values as per code of ethics of drivers.</p> <p>3.2 Respond to complaints with respect to driver’s code of ethics.</p> <p>3.3 Handle complaints based on driver’s code of ethics.</p> <p>3.4 Convey reminders to passengers politely.</p>	<p>TLE_IADRV9-12OOT-IVh-29</p>
<ul style="list-style-type: none"> • Roles of traffic enforcers • Traffic violations and penalties 			<p>LO 4. Respect traffic enforcers and other traffic management unit.</p> <p>4.1 Comply with traffic authority instructions as prescribed by law.</p> <p>4.2 Accept traffic violation tickets/receipts issued by traffic enforcers and take appropriate action.</p>	<p>TLE_IADRV9-12OOT-IVh-30</p>
LESSON 10: IMPLEMENTING AND COORDINATING ACCIDENT-EMERGENCY PROCEDURES (ICA)				
<ul style="list-style-type: none"> • Kinds of emergency situations • Hazards and reminders in the event of emergency • Preparation of incident report and other documentation to authority and medical personnel • Handling and use of fire extinguisher • Handling vehicle emergencies and crime 	<p>The learner demonstrates an understanding of concepts and underlying principles in implementing and coordinating accident-emergency procedures.</p>	<p>The learner independently performs implementation and coordination of accident-emergency procedures based on standard emergency-medical procedures.</p>	<p>LO 1. Respond to emergencies.</p> <p>1.1 Identify emergency and potential emergency situations based on emergency procedure.</p> <p>1.2 Assess emergency and potential emergency situations based on emergency procedure.</p> <p>1.3 Prioritize actions based on the criticality of the emergency.</p> <p>1.4 Provide actions based on the emergency situation.</p> <p>1.5 Prepare incident reports in accordance with regulatory and workplace procedures.</p>	<p>TLE_IADRV9-12DLV-IVi-31</p>

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CONTENT	CONTENT STANDARD	PERFORMANCE STANDARD	LEARNING COMPETENCIES	CODE
prevention tips			1.6 Fulfill responsibilities in accordance with emergency procedures and/or regulatory requirements.	
<ul style="list-style-type: none"> • First aid practices • Kinds of car injuries • Proper ways on transporting injured person • Hospital procedures in emergency situations 			LO 2. Arrange follow-up support and assistance. 2.1 Arrange medical assistance and support in accordance with workplace procedures. 2.2 Apply first aid in accordance with medical procedure. 2.3 Identify passenger needs based on emergency situations. 2.4 Provide passenger needs based on emergency situations.	TLE_IADRV9-12DLV-IVj-32

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RESOURCES			METHODOLOGY	ASSESSMENT METHOD
TOOLS	EQUIPMENT	MATERIALS		
<ul style="list-style-type: none"> • Mop • Basket • Pail • Polisher • Broom • Hose • Cross wrench • Mechanical pliers • Long nose pliers • Feeler gauge • Tire gauge • Goggles • Plastic boots • Combination wrench • Socket wrench • Creeper • Screwdriver (flat & phillips) • Early warning device • Jack • Spare tire • Flashlight • Emergency lighting device/ trouble light • Dunce pin • Spark plug wrench • Oil filter wrench • Jack stand • Wheel choke 	<ul style="list-style-type: none"> • Light vehicle unit • Jeepney • Vacuum pump • Steam cleaner • Air compressor 	<ul style="list-style-type: none"> • Soap • Shampoo • Glove • Apron • Engine oil • Gear Oil • Air Freshener • Polish • Distilled water • Fan belt • Wheel cap • Fuse • Electrical tape • Brake fluid • A/C belt • P/S belt • Coolant • Additives • Relay • Fender cover • Seat cover • Floor mat • Steering wheel cover • ATF power steering fluid • Assorted bulbs 	<ul style="list-style-type: none"> • Self paced learning • Discussion • Case study • Role play • Individual and group practice • Project-based method • Supervised industry training (SIT) 	<ul style="list-style-type: none"> • Written examination • Practical demonstration • Observation/Interview • Work samples • Portfolio

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(160 hours)

GLOSSARY

- | | |
|---|---|
| 1. Absolute speed limit | - Maximum or minimum legal speed at which one may drive. This speed limit may or may not be posted. |
| 2. Accident, motor vehicle | - Any mishap involving a moving vehicle and resulting in death, injury or property damage. |
| 3. Basic speed limit | - Any speed below the absolute limit that is safe for existing road, weather or traffic conditions. |
| 4. Collision | - Any crash between motor vehicles or between a motor vehicle and another object. |
| 5. Driving license | - Legal document in the form of plastic identification card and official receipt issued by LTO authorizing a person to drive and operate a specified type of motor vehicle after satisfactorily completing and passing the standard requirement as categorized either non-professional or professional proficiency level. |
| 6. Defensive driving | - Being prepared to handle through any hazardous situation caused by other users of the road. |
| 7. Directional signals | - Lights on motor vehicle or hand signals used to indicate left and right turns and stops. |
| 8. Driver | - Person who drives motor vehicle and transport passengers and loads over specified routes or destination for a fee. |
| 9. Fare | - The price charged to transport a passenger |
| 10. Franchised route | - Designated travel route assigned by LTFRB (DOTC) to a specific public passenger motor vehicle indicating the particular main streets, roads and avenues to ply including its limitations and boundaries. |
| 11. Periodic Maintenance Service | - Regular servicing prescribed by manufacturer to maintain the vehicle's top performance. |
| 12. Motorcycle | - A single passenger vehicle for operation on ordinary and typically having two wheels and a gasoline internal combustion engine. |
| 13. Public Utility Jeepney (PUJ) | - Locally manufactured and modified jeepney-type vehicle intended to carry as much passengers as prescribed and authorized by Land Transportation Franchise Regulatory Board (LTFRB) as approved by the Department of Transportation and Communication (DOTC). |
| 14. Regulatory signs | - Traffic signs that tell what a driver must or must not do under penalty of the law. |
| 15. Road Related Accident and Emergency | - Unforeseen and unanticipated road happenings usually resulting from the driver's negligence/error, abnormal road condition and motor vehicle mechanical safety breakdown resulting to grave vehicular accident, passenger body injury and damage to property. |
| 16. Roadway markings | - Markings on a pavement separating lanes of travel or indicating what a driver may do. |
| 17. Seat belt | - A belt anchored to the vehicle frame. It prevents the passengers from being thrown against parts of the interior of the vehicle or from the vehicle in the event of a collision. |
| 18. Taxicab | - Public utility car that transport passenger to a designated location and collect fare recorded on taximeter based on mileage or time factors specified by the LTFRB. |
| 19. Traffic | - Flow of all motor vehicles and pedestrians along the street and the highway |
| 20. Traffic signal lights | - Traffic controls which usually are located at intersections to regulate traffic flow |
| 21. Tricycle Unit | - A 3-wheeled motor vehicle consisting of a motorcycle and a modified passenger sidecar with a seating capacity prescribed and authorized. It is franchised by LTFRB to operate and transport passengers within a specified area of operation with a pre-set and fixed fare. |
| 22. Warning signs | - Traffic signs that alert drivers to potential hazards ahead. |

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(160 hours)

CODE BOOK LEGEND

Sample: **TLE_IADRV9-12AAS-Ia-1**

LEGEND		SAMPLE	
First Entry	Learning Area and Strand/ Subject or Specialization	Technology and Livelihood Education_ Industrial Arts Driving	TLE_IA DRV9-12
	Grade Level	9/10/11/12	
Uppercase Letter/s	Domain/ Content/ Component/ Topic	Apply Appropriate Sealant/Adhesive	AAS
			-
Roman Numeral <i>*Zero if no specific Quarter</i>	Quarter	First Quarter	I
Lower case letter/s <i>*Put an en-dash (-) in between letters to indicate more than a specific week</i>	Week	Week one	a
Arabic Number	Competency	Identify appropriate sealant/adhesive.	1

DOMAIN / COMPONENT	CODE
Applying Appropriate Sealant/Adhesive	AAS
Moving and Positioning Vehicle	MPV
Performing Mensuration and Calculation	PMC
Reading, Interpreting and Applying Specification Manual	RIA
Using and Applying Lubricant/Coolant	UAL
Perform Shop Maintenance	PSM
Carrying Out Minor Vehicle Maintenance and Servicing	CMV
Driving Light Vehicle	DLV
Obeying and Observing Traffic Rules and Regulations	OOT
Implementing and Coordinating Accident-Emergency Procedures	ICA

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 Industrial Arts specialization and those that have pre-requisites. Curriculum Maps may be modified according to specializations offered by a school.

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(160 hours)

SAMPLE INDUSTRIAL ARTS CURRICULUM MAP** (as of November 2015)

GRADE 7/8 (EXPLORATORY)			GRADES 9-12			
			Automotive Servicing (NC I)+			8 sems
			*Automotive Servicing (NC II)			8 sems
			Motorcycle/Small Engine Servicing (NC II)	4 sems	Driving (NC II)	2 sems
			Consumer Electronics Servicing (NC II)+			8 sems
			*Mechatronics Servicing (NC II)			4 sems
			Electronic Products Assembly and Servicing (NC II)+ +			8 sems
			*Instrumentation Control and Servicing (NC II)			4 sems
			Electrical Installation and Maintenance (NC II)			8 sems
			*Electrical Power Line Distribution Line Construction (NC II)			4 sems
			*Transmission Line Installation and Maintenance (NC II)			4 sems
			Machining (NC I)+ +			8 sems
			*Machining (NC II)			8 sems
			Plumbing (NC I)	4 sems	*Plumbing (NC II)	4 sems
			Domestic Refrigeration and Airconditioning Servicing (NC II)			8 sems
			*Domestic Refrigeration and Airconditioning Servicing (PACU/CRE) (NC III)			8 sems
			*Shielded Metal Arc Welding (NC II)			4 sems
			Shielded Metal Arc Welding (NC I)	4 sems	*Gas Metal Arc Welding (GMAW) (NC II)	4 sems
			*Gas Tungsten Arc Welding (GTAW) (NC II)			4 sems
			Carpentry (NC II)			8 sems
			*Carpentry (NC III)	4 sems	Construction Painting (NC II)	2 sems
			Furniture Making (Finishing) (NC II) +			6 sems
		4 sems	Masonry (NC II)	4 sems	Tile Setting (NC II)	4 sems

EXPLORATORY

* Please note that these subjects have pre-requisites mentioned in the CG.

+ CG to be updated by December 2015

+ + CG to be uploaded by December 2015

Other specializations with no pre-requisites may be taken up during these semesters.

Pre-requisites of the subjects to the right should be taken up during these semesters.

****This is just a sample. Schools make their own curriculum maps considering the specializations to be offered. Subjects may be taken up at any point during Grades 9-12.**