

# TRAINING REGULATIONS



## DRIVING (Articulated Vehicle) NC III

**AUTOMOTIVE AND  
LAND TRANSPORT SECTOR**

**TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY**  
East Service Road, South Superhighway, Taguig City, Metro Manila

*Technical Education and Skills Development Act of 1994  
(Republic Act No. 7796)*

**Section 22, “Establishment and Administration of the National Trade Skills Standards” of the RA 7796 known as the TESDA Act mandates TESDA to establish national occupational skill standards. The Authority shall develop and implement a certification and accreditation program in which private industry group and trade associations are accredited to conduct approved trade tests, and the local government units to promote such trade testing activities in their respective areas in accordance with the guidelines to be set by the Authority.**

The Training Regulations (TR) serve as basis for the:

1. Competency assessment and certification;
2. Registration and delivery of training programs; and
3. Development of curriculum and assessment instruments.

Each TR has four sections:

- Section 1      Definition of Qualification - refers to the group of competencies that describes the different functions of the qualification.
- Section 2      Competency Standards - gives the specifications of competencies required for effective work performance.
- Section 3      Training Standards - contains information and requirements in designing training program for certain Qualification. It includes curriculum design, training delivery; trainee entry requirements; tools equipment and materials; training facilities; trainer's qualification and institutional assessment.
- Section 4      National Assessment and Certification Arrangement - describes the policies governing assessment and certification procedure.

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**TRAINING REGULATIONS FOR  
DRIVING (Articulated Vehicle) NC III**

**SECTION 1 DRIVING (Articulated Vehicle) NC III QUALIFICATION**

The DRIVING (Articulated Vehicle) NC III Qualification consists of competencies that a person must achieve to drive/operate upon highways motor road vehicles classified under LTO Restriction codes 6 up to 8; transport heavy goods, liquids and materials over specified long or short distances; comply with local traffic rules/regulations and ordinances and perform minor repairs on the assigned vehicle.

This Qualification is packaged from the competency map of the Automotive/Land Transport sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

<b>CODE NO.</b>	<b>BASIC COMPETENCIES</b>
500311109	Lead Workplace Communication
500311110	Lead Small Teams
500311111	Develop and Practice Negotiation skills
500311112	Solve Problems Related to Work Activities
500311113	Use Mathematical Concepts and Techniques
500311114	Use Relevant Technologies

<b>CODE</b>	<b>COMMON COMPETENCIES</b>
ALT723201	Apply Appropriate Sealant/Adhesive
ALT311205	Interpret/Draw Technical Drawing
ALT723202	Move and Position Vehicle
ALT311204	Perform Job Estimate
ALT311202	Perform Mensuration and Calculation
ALT723203	Read, Interpret and Apply Specifications and Manuals
ALT723204	Use and Apply Lubricant/Coolant
ALT723205	Perform Shop Maintenance

<b>CODE NO.</b>	<b>CORE COMPETENCIES</b>
ALT723349	Perform Minor Maintenance and Servicing on Vehicles Classified under LTO Restriction Codes 6 up to 8
ALT832305	Perform Pre-and Post Operation Procedures Vehicles Classified under LTO Restriction Codes 6 up to 8
ALT832303	Obey and Observe Traffic Rules and Regulations
ALT832309	Observe Road Health and Safety Practices
ALT832304	Implement and Coordinate Accident-Emergency Procedures
ALT832308	Drive Articulated Vehicle

A person who has achieved this Qualification is competent to be:

- Articulated Vehicle Driver
- Truck Trailer Driver

## SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in DRIVING (Articulated Vehicle) NC III.

### BASIC COMPETENCIES

**UNIT OF COMPETENCY : LEAD WORKPLACE COMMUNICATION**

**UNIT CODE : 500311109**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes required to lead in the dissemination and discussion of ideas, information and issues in the workplace.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Communicate information about workplace processes	1.1 Appropriate <b>communication method</b> is selected 1.2 Multiple operations involving several topics areas are communicated accordingly 1.3 Questions are used to gain extra information 1.4 Correct sources of information are identified 1.5 Information is selected and organized correctly 1.6 Verbal and written reporting is undertaken when required 1.7 Communication skills are maintained in all situations
2. Lead workplace discussions	2.1 Response to workplace issues are sought 2.2 Response to workplace issues are provided immediately 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety 2.4 Goals/objectives and action plan undertaken in the workplace are communicated
3. Identify and communicate issues arising in the workplace	3.1 Issues and problems are identified as they arise 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication 3.3 Dialogue is initiated with appropriate personnel 3.4 Communication problems and issues are raised as they arise

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Methods of communication	1.1 Non-verbal gestures 1.2 Verbal 1.3 Face to face 1.4 Two-way radio 1.5 Speaking to groups 1.6 Using telephone 1.7 Written 1.8 Internet

## EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Dealt with a range of communication/information at one time 1.2 Made constructive contributions in workplace issues 1.3 Sought workplace issues effectively 1.4 Responded to workplace issues promptly 1.5 Presented information clearly and effectively written form 1.6 Used appropriate sources of information 1.7 Asked appropriate questions 1.8 Provided accurate information
2. Underpinning knowledge	2.1 Organization requirements for written and electronic communication methods 2.2 Effective verbal communication methods
3. Underpinning Skills	3.1 Organize information 3.2 Understand and convey intended meaning 3.3 Participate in variety of workplace discussions 3.4 Comply with organization requirements for the use of written and electronic communication methods
4. Resource Implications	The following resources <b>MUST</b> be provided: 4.1 Variety of Information 4.2 Communication tools 4.3 Simulated workplace
5. Methods of Assessment	Competency may be assessed through: 5.1 Competency in this unit must be assessed through 5.2 Direct Observation 5.3 Interview
6. Context for Assessment	Competency may be assessed in the workplace or in simulated workplace environment

**UNIT OF COMPETENCY : LEAD SMALL TEAMS**

**UNIT CODE : 500311110**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes to lead small teams including setting and maintaining team and individual performance standards.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Provide team leadership	1.1 <b>Work requirements</b> are identified and presented to team members 1.2 Reasons for instructions and requirements are communicated to team members 1.3 <b>Team members' queries and concerns</b> are recognized, discussed and dealt with
2. Assign responsibilities	2.1 Duties, and responsibilities are allocated having regard to the skills, knowledge and aptitude required to properly undertake the assigned task and according to company policy 2.2 Duties are allocated having regard to individual preference, domestic and personal considerations, whenever possible
3. Set performance expectations for team members	3.1 Performance expectations are established based on client needs and according to assignment requirements 3.2 Performance expectations are based on individual team members duties and area of responsibility 3.3 Performance expectations are discussed and disseminated to individual team members
4. Supervised team performance	4.1 <b>Monitoring of performance</b> takes place against defined performance criteria and/or assignment instructions and corrective action taken if required 4.2 Team members are provided with <b>feedback</b> , positive support and advice on strategies to overcome any deficiencies 4.3 <b>Performance issues</b> which cannot be rectified or addressed within the team are referenced to appropriate personnel according to employer policy 4.4 Team members are kept informed of any changes in the priority allocated to assignments or tasks which might impact on client/customer needs and satisfaction 4.5 Team operations are monitored to ensure that employer/client needs and requirements are met 4.6 Follow-up communication is provided on all issues affecting the team 4.7 All relevant documentation is completed in accordance with company procedures

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Work requirements	1.1 Client Profile 1.2 Assignment instructions
2. Team member's concerns	2.1 Roster/shift details
3. Monitor performance	3.1 Formal process 3.2 Informal process
4. Feedback	4.1 Formal process 4.2 Informal process
5. Performance issues	5.1 Work output 5.2 Work quality 5.3 Team participation 5.4 Compliance with workplace protocols 5.5 Safety 5.6 Customer service

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Maintained or improved individuals and/or team performance given a variety of possible scenario</li> <li>1.2 Assessed and monitored team and individual performance against set criteria</li> <li>1.3 Represented concerns of a team and individual to next level of management or appropriate specialist and to negotiate on their behalf</li> <li>1.4 Allocated duties and responsibilities, having regard to individual's knowledge, skills and aptitude and the needs of the tasks to be performed</li> <li>1.5 Set and communicated performance expectations for a range of tasks and duties within the team and provided feedback to team members</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Company policies and procedures</li> <li>2.2 Relevant legal requirements</li> <li>2.3 How performance expectations are set</li> <li>2.4 Methods of Monitoring Performance</li> <li>2.5 Client expectations</li> <li>2.6 Team member's duties and responsibilities</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Communication skills required for leading teams</li> <li>3.2 Informal performance counseling skills</li> <li>3.3 Team building skills</li> <li>3.4 Negotiating skills</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources <b>MUST</b> be provided:</p> <ul style="list-style-type: none"> <li>4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place</li> <li>4.2 Materials relevant to the proposed activity or task</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observations of work activities of the individual member in relation to the work activities of the group</li> <li>5.2 Observation of simulation and/or role play involving the participation of individual member to the attainment of organizational goal</li> <li>5.3 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency assessment may occur in workplace or any appropriately simulated environment</li> <li>6.2 Assessment shall be observed while task are being undertaken whether individually or in-group</li> </ul>

**UNIT OF COMPETENCY : DEVELOP AND PRACTICE NEGOTIATION SKILLS**

**UNIT CODE : 500311111**

**UNIT DESCRIPTOR :** This unit covers the skills, knowledge and attitudes required to collect information in order to negotiate to a desired outcome and participate in the negotiation.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Plan negotiations	1.1 Information on <b><i>preparing for negotiation</i></b> is identified and included in the plan 1.2 Information on creating <b><i>non verbal environments</i></b> for positive negotiating is identified and included in the plan 1.3 Information on <b><i>active listening</i></b> is identified and included in the plan 1.4 Information on different <b><i>questioning techniques</i></b> is identified and included in the plan 1.5 Information is checked to ensure it is correct and up-to- date
2. Participate in negotiations	2.1 Criteria for successful outcome are agreed upon by all parties 2.2 Desired outcome of all parties are considered 2.3 Appropriate language is used throughout the negotiation 2.4 A variety of questioning techniques are used 2.5 The issues and processes are documented and agreed upon by all parties 2.6 Possible solutions are discussed and their viability assessed 2.7 Areas for agreement are confirmed and recorded 2.8 Follow-up action is agreed upon by all parties

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Preparing for negotiation	1.1 Background information on other parties to the negotiation 1.2 Good understanding of topic to be negotiated 1.3 Clear understanding of desired outcome/s 1.4 Personal attributes 1.4.1 self awareness 1.4.2 self esteem 1.4.3 objectivity 1.4.4 empathy 1.4.5 respect for others 1.5 Interpersonal skills 1.5.1 listening/reflecting 1.5.2 non verbal communication 1.5.3 assertiveness 1.5.4 behavior labeling 1.5.5 testing understanding 1.5.6 seeking information 1.5.7 self disclosing 1.6 Analytic skills 1.6.1 observing differences between content and process 1.6.2 identifying bargaining information 1.6.3 applying strategies to manage process 1.6.4 applying steps in negotiating process 1.6.5 strategies to manage conflict 1.6.6 steps in negotiating process 1.6.7 options within organization and externally for resolving conflict
2. Non verbal environments	2.1 Friendly reception 2.2 Warm and welcoming room 2.3 Refreshments offered 2.4 Lead in conversation before negotiation begins
3. Active listening	3.1 Attentive 3.2 Don't interrupt 3.3 Good posture 3.4 Maintain eye contact 3.5 Reflective listening
4. Questioning techniques	4.1 Direct 4.2 Indirect 4.3 Open-ended

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Demonstrated sufficient knowledge of the factors influencing negotiation to achieve agreed outcome</p> <p>1.2 Participated in negotiation with at least one person to achieve an agreed outcome</p>
<p>2. Underpinning Knowledge and Attitude</p>	<p>2.1 Codes of practice and guidelines for the organization</p> <p>2.2 Organizations policy and procedures for negotiations</p> <p>2.3 Decision making and conflict resolution strategies procedures</p> <p>2.4 Problem solving strategies on how to deal with unexpected questions and attitudes during negotiation</p> <p>2.5 Flexibility</p> <p>2.6 Empathy</p>
<p>3. Underpinning Skills</p>	<p>3.1 Interpersonal skills to develop rapport with other parties</p> <p>3.2 Communication skills (verbal and listening)</p> <p>3.3 Observation skills</p> <p>3.1 Negotiation skills</p>
<p>4. Resource Implications</p>	<p>The following resources <b>MUST</b> be provided:</p> <p>4.1 Room with facilities necessary for the negotiation process</p> <p>4.2 Human resources (negotiators)</p>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <p>5.1 Observation/demonstration and questioning</p> <p>5.2 Portfolio assessment</p> <p>5.3 Oral and written questioning</p> <p>5.4 Third party report</p>
<p>6. Context for Assessment</p>	<p>Competency to be assessed in real work environment or in a simulated workplace setting.</p>

**UNIT OF COMPETENCY : SOLVE PROBLEMS RELATED TO WORK ACTIVITIES**

**UNIT CODE : 500311112**

**UNIT DESCRIPTOR :** This unit of covers the knowledge, skills and attitudes required to solve problems in the workplace including the application of problem solving techniques and to determine and resolve the root cause of problems.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify the problem	1.1 Variances are identified from normal operating parameters; and product quality 1.2 Extent, cause and nature are of the problem are defined through observation, investigation and <b><i>analytical techniques</i></b> 1.3 <b><i>Problems</i></b> are clearly stated and specified
2. Determine fundamental causes of the problem	2.1 Possible causes are identified based on experience and the use of problem solving tools / analytical techniques. 2.2 Possible cause statements are developed based on findings 2.3 Fundamental causes are identified per results of investigation conducted
3. Determine corrective action	3.1 All possible options are considered for resolution of the problem 3.2 Strengths and weaknesses of possible options are considered 3.3 Corrective actions are determined to resolve the problem and possible future causes 3.4 <b><i>Action plans</i></b> are developed identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures
4. Provide recommendation/s to manager	4.1 Report on recommendations are prepared 4.2 Recommendations are presented to appropriate personnel. 4.3 Recommendations are followed-up, if required

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Analytical techniques	1.1 Brainstorming 1.2 Intuitions/Logic 1.3 Cause and effect diagrams 1.4 Pareto analysis 1.5 SWOT analysis 1.6 Gant chart, Pert CPM and graphs 1.7 Scattergrams
2. Problem	2.1 Non – routine process and quality problems 2.2 Equipment selection, availability and failure 2.3 Teamwork and work allocation problem 2.4 Safety and emergency situations and incidents
3. Action plans	3.1 Priority requirements 3.2 Measurable objectives 3.3 Resource requirements 3.4 Timelines 3.5 Co-ordination and feedback requirements 3.6 Safety requirements 3.7 Risk assessment 3.8 Environmental requirements

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified the problem</li> <li>1.2 Determined the fundamental causes of the problem</li> <li>1.3 Determined the correct / preventive action</li> <li>1.4 Provided recommendation to manager</li> </ul> <p>These aspects may be best assessed using a range of scenarios / case studies / what ifs as a stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.</p>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations</li> <li>2.2 Competence to include the ability to apply and explain, sufficient for the identification of fundamental cause, determining the corrective action and provision of recommendations <ul style="list-style-type: none"> <li>2.2.1 Relevant equipment and operational processes</li> <li>2.2.2 Enterprise goals, targets and measures</li> <li>2.2.3 Enterprise quality, OHS and environmental requirement</li> <li>2.2.4 Principles of decision making strategies and techniques</li> <li>2.2.5 Enterprise information systems and data collation</li> <li>2.2.6 Industry codes and standards</li> </ul> </li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Using range of formal problem solving techniques</li> <li>3.2 Identifying and clarifying the nature of the problem</li> <li>3.3 Devising the best solution</li> <li>3.4 Evaluating the solution</li> <li>3.5 Implementation of a developed plan to rectify the problem</li> </ul>
<p>4. Resource Implications</p>	<p>4.1 Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios / case studies / what ifs will be required as well as bank of questions which will be used to probe the reason behind the observable action.</p>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Case studies on solving problems in the workplace</li> <li>5.2 Observation</li> </ul> <p>The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.</p>
<p>6. Context for Assessment</p>	<p>In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.</p>

**UNIT OF COMPETENCY : USE MATHEMATICAL CONCEPTS AND TECHNIQUES**

**UNIT CODE : 500311113**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes required in the application of mathematical concepts and techniques.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify mathematical tools and techniques to solve problem	1.1 Problem areas are identified based on given condition 1.2 <b><i>Mathematical techniques</i></b> are selected based on the given problem
2. Apply mathematical procedure/solution	2.1 Mathematical techniques are applied based on the problem identified 2.2 Mathematical computations are performed to the level of accuracy required for the problem 2.3 Results of mathematical computation is determined and verified based on job requirements
3. Analyze results	3.1 Result of application is reviewed based on expected and required specifications and outcome 3.2 <b><i>Appropriate action</i></b> is applied in case of error

### **RANGE OF VARIABLES**

<b>VARIABLE</b>	<b>RANGE</b>
1. Mathematical techniques	May include but are not limited to: 1.1 Four fundamental operations 1.2 Measurements 1.3 Use/Conversion of units of measurements 1.4 Use of standard formulas
2. Appropriate action	2.1 Review in the use of mathematical techniques (e.g. recalculation, re-modeling) 2.2 Report error to immediate superior for proper action

## EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified, applied and reviewed the use of mathematical concepts and techniques to workplace problems
2. Underpinning Knowledge	2.1 Fundamental operation (addition, subtraction, division, multiplication) 2.2 Measurement system 2.3 Precision and accuracy 2.4 Basic measuring tools/devices
3. Underpinning Skills	3.1 Applying mathematical computations 3.2 Using calculator 3.3 Using different measuring tools
4. Resource Implications	The following resources <b>MUST</b> be provided: 4.1 Calculator 4.2 Basic measuring tools 4.3 Case Problems
5. Methods of Assessment	Competency may be assessed through: 5.1 Authenticated portfolio 5.2 Written Test 5.3 Interview/Oral Questioning 5.4 Demonstration
6. Context for Assessment	Competency may be assessed in the work place or in a simulated work place setting

**UNIT OF COMPETENCY : USE RELEVANT TECHNOLOGIES**

**UNIT CODE : 500311114**

**UNIT DESCRIPTOR :** This unit of competency covers the knowledge, skills, and attitude required in selecting, sourcing and applying appropriate and affordable technologies in the workplace.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Study/select appropriate technology	1.1 Usage of different <b>technologies</b> is determined based on job requirements 1.2 Appropriate technology is selected as per work specification
2. Apply relevant technology	2.1 Relevant technology is effectively used in carrying out function 2.2 Applicable software and hardware are used as per task requirement 2.3 <b>Management concepts</b> are observed and practiced as per established industry practices
3. Maintain/enhance of relevant technology	3.1 Maintenance of technology is applied in accordance with the <b>industry standard operating procedure, manufacturer's operating guidelines</b> and <b>occupational health and safety procedure</b> to ensure its operative ability 3.2 Updating of technology is maintained through continuing education or training in accordance with job requirement 3.3 Technology failure/ defect is immediately reported to the concern/responsible person or section for <b>appropriate action</b>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Technology	May include but are not limited to: 1.1 Office technology 1.2 Industrial technology 1.3 System technology 1.4 Information technology 1.5 Training technology
2. Management concepts	May include but not limited to: 2.1 Real Time Management 2.2 KAIZEN or continuous improvement 2.3 5s 2.4 Total Quality Management 2.5 Other management/productivity tools
3. Industry standard operating procedure	3.1 Written guidelines relative to the usage of office technology/equipment 3.2 Verbal advise/instruction from the co-worker
4. Manufacturer's operating guidelines/ instructions	4.1 Written instruction/manuals of specific technology/ equipment 4.2 General instruction manual 4.3 Verbal advise from manufacturer relative to the operation of equipment
5. Occupational health and safety procedure	5.1 Relevant statutes on OHS 5.2 Company guidelines in using technology/equipment
6. Appropriate action	6.1 Implementing preventive maintenance schedule 6.2 Coordinating with manufacturer's technician

## EVIDENCE GUIDE

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Studied and selected appropriate technology consistent with work requirements</li> <li>1.2 Applied relevant technology</li> <li>1.3 Maintained and enhanced operative ability of relevant technology</li> </ul>
2. Underpinning Knowledge	<ul style="list-style-type: none"> <li>2.1 Awareness on technology and its function</li> <li>2.2 Repair and maintenance procedure</li> <li>2.3 Operating instructions</li> <li>2.4 Applicable software</li> <li>2.5 Communication techniques</li> <li>2.6 Health and safety procedure</li> <li>2.7 Company policy in relation to relevant technology</li> <li>2.8 Different management concepts</li> <li>2.9 Technology adaptability</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Relevant technology application/implementation</li> <li>3.2 Basic communication skills</li> <li>3.3 Software applications skills</li> <li>3.4 Basic troubleshooting skills</li> </ul>
4. Resource Implications	<p>The following resources <b>MUST</b> be provided:</p> <ul style="list-style-type: none"> <li>4.1 Relevant technology</li> <li>4.2 Interview and demonstration questionnaires</li> <li>4.3 Assessment packages</li> </ul>
5. Methods of Assessment	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Interview</li> <li>5.2 Actual demonstration</li> <li>5.3 Authenticated portfolio (related certificates of training/seminar)</li> </ul>
6. Context for Assessment	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in actual workplace or simulated environment</li> </ul>

## COMMON COMPETENCIES AUTOMOTIVE

**UNIT OF COMPETENCY** : **PERFORM MENSURATION AND CALCULATION**

**UNIT CODE** : **ALT311202**

**UNIT DESCRIPTOR** : This unit includes identifying caring, handling and use of measuring instruments.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Select measuring instruments	1.1 Object or component to be measured is identified 1.2 Correct specifications are obtained from relevant source 1.3 Appropriate <b>measuring instrument</b> is selected according to job requirements
2. Carry out measurements and calculation	2.1 Measuring tools are selected in line with job requirements 2.2 Accurate measurements are obtained to job 2.3 <b>Calculation</b> needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/). 2.4 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks. 2.5 Numerical computation is self-checked and corrected for accuracy 2.6 Instruments are read to the limit of accuracy of the tool.
3. Maintain measuring instruments	3.1 Measuring instruments must kept free from corrosion 3.2 Measuring instruments not dropped to avoid damage 3.3 Measuring instruments cleaned before and after using.

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Measuring instruments	Measuring instruments includes: <ul style="list-style-type: none"> <li>1.1 Multitester</li> <li>1.2 Micrometer (In-out, depth)</li> <li>1.3 Vernier caliper (Out, inside)</li> <li>1.4 Dial Gauge with Mag. Std.</li> <li>1.5 Plastigauge</li> <li>1.6 Straight Edge</li> <li>1.7 Thickness gauge</li> <li>1.8 Torque Gauge</li> <li>1.9 Small Hole gauge</li> <li>1.10 Telescopic Gauge</li> <li>1.11 Try square</li> <li>1.12 Protractor</li> <li>1.13 Combination gauge</li> <li>1.14 Steel rule</li> </ul>
2. Calculation	Kinds of Part Mensuration include: <ul style="list-style-type: none"> <li>2.1 Volume</li> <li>2.2 Area</li> <li>2.3 Displacement</li> <li>2.4 Inside diameter</li> <li>2.5 Circumference</li> <li>2.6 Length</li> <li>2.7 Thickness</li> <li>2.8 Outside diameter</li> <li>2.9 Taper</li> <li>2.10 Out of roundness</li> <li>2.11 Oil clearance</li> <li>2.12 End play/thrust clearance</li> </ul>

## EVIDENCE GUIDE

<p>1. Critical Aspect of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Selected measuring instruments</li> <li>1.2 Carried-out measurements and calculations.</li> <li>1.3 Maintained measuring instruments</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Types of Measuring instruments and its uses</li> <li>2.2 Safe handling procedures in using measuring instruments</li> <li>2.3 Four fundamental operation of mathematics</li> <li>2.4 Formula for Volume, Area, Perimeter and other geometric figures</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Caring and Handling measuring instruments</li> <li>3.2 Calibrating and using measuring instruments</li> <li>3.3 Performing calculation by Addition, Subtraction, Multiplication and Division</li> <li>3.4 Visualizing objects and shapes</li> <li>3.5 Interpreting formula for volume, area, perimeter and other geometric figures</li> </ul>
<p>4. Resource Implication</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location</li> <li>4.2 Measuring instrument appropriate to servicing processes</li> <li>4.3 Instructional materials relevant to the propose activity</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Observation with questioning</li> <li>5.2 Written or oral examination</li> <li>5.3 Interview</li> <li>5.4 Demonstration with questioning</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency elements must be assessed in a safe working environment</li> <li>6.2 Assessment may be conducted in a workplace or simulated environment</li> </ul>

**UNIT TITLE** : **READ, INTERPRET AND APPLY SPECIFICATION AND MANUALS.**

**UNIT CODE** : **ALT723203**

**UNIT DESCRIPTOR** : This unit deals with identifying, interpreting and applying service specification manuals, maintenance procedure manuals and periodic maintenance manual.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify and access manual/ specification	1.1 Appropriate <b>manuals</b> are identified and accessed as per job requirements. 1.2 Version and date of manual is checked to ensure correct specification and procedure are identified.
2. Interpret manuals	2.1 Relevant sections, chapters of manuals/specifications are located in relations to the work to be conducted 2.2 Information and procedure in the manual are interpreted in accordance to industry practices
3. Apply information in manual	3.1 Manual is interpreted according to job requirements 3.2 Work steps are correctly identified in accordance with manufacturer specification 3.3 Manual data is applied according to the given task 3.4 All correct sequencing and adjustments are interpreted in accordance with information contained on the manual or specifications
4. Store manuals	4.1 Manual or specification are stored appropriately to ensure prevention of damage, ready access and updating of information when required in accordance with company requirements

**RANGE OF VARIABLES**

<b>VARIABLE</b>	<b>RANGE</b>
1. Manuals	Kinds of manuals: 1.1 Manufacturer's specification manual 1.2 Repair manual 1.3 Maintenance Procedure Manual 1.4 Periodic Maintenance Manual

## EVIDENCE GUIDE

<p>1. Critical Aspect of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified and accessed manual/specification</li> <li>1.2 Interpreted manuals</li> <li>1.3 Applied information in manuals</li> <li>1.4 Stored manuals</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Types of manuals used in automotive industry</li> <li>2.2 Identification of symbols used in the manuals</li> <li>2.3 Identification of units of measurements</li> <li>2.4 Unit conversion</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Reading and comprehension skills required to identify and interpret automotive manuals and specifications</li> <li>3.2 Accessing information and data</li> </ul>
<p>4. Resource Implication</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 All manuals/catalogues relative to Automotive</li> <li>4.2 Job order, requisitions</li> <li>4.3 Actual vehicle or simulator</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Observation with questioning</li> <li>5.2 Interview</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> <li>6.2 Assessment may be conducted in the workplace or a simulated environment.</li> </ul>

**UNIT OF COMPETENCY : MOVE AND POSITION VEHICLE**

**UNIT CODE : ALT723202**

**UNIT DESCRIPTOR :** This competency unit covers the knowledge, skills and attitude needed to move and position vehicle in a workshop.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Prepare vehicle for driving	1.1 Correct <b><i>check-up procedures</i></b> performed based on vehicle manufacturer standard
2. Move and position vehicle	2.1 Select vehicle to be moved or re-position. 2.2 Drive the vehicle to appropriate location 2.3 Park vehicle following <b><i>parking safety techniques</i></b> and procedure
3. Check the vehicle	3.1 <b><i>Vehicle</i></b> position is checked as per required 3.2 Vehicle is checked for external damages

#### **RANGE OF VARIABLE**

<b>VARIABLE</b>	<b>RANGE</b>
1. Check up procedure	Check up procedures include the following: 1.1 Oil level 1.2 Brake fluid 1.3 Clutch fluid 1.4 Coolant level 1.5 Battery (electrolyte) 1.6 Tire pressure 1.7 Position of driving gear 1.8 Lighting and warning devices
2. Vehicles	2.1 Vehicles with automatic transmission 2.2 Vehicles with manual transmission
3. Parking safety techniques	3.1 Engaging of Park brake 3.2 Vehicle parking position 3.3 Front wheel position

## EVIDENCE GUIDE

1. Critical Aspect of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Prepared vehicle for driving.</li> <li>1.2 Moved and positioned vehicle</li> <li>1.3 Checked the vehicle.</li> </ul>
2. Underpinning Knowledge and Attitudes	<ul style="list-style-type: none"> <li>2.1 Driver's Code of conduct</li> <li>2.2 Workshop signs and symbols</li> <li>2.3 Driving skills</li> <li>2.4 Vehicle accessories for safe driving and parking</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Ability to handle vehicle/maneuver vehicle the easiest way</li> <li>3.2 Immediate response to accident</li> <li>3.3 Preparing vehicle for driving</li> <li>3.4 Parking Downhill, Uphill, Parallel</li> <li>3.5 Shifting Gears</li> <li>3.6 Maneuvering</li> </ul>
4. Resource Implication	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Driving range/area</li> <li>4.2 Appropriate vehicle for driving</li> <li>4.3 Vehicle accessories</li> </ul>
5. Method of Assessment	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Observation with questioning</li> <li>5.2 Written or oral examination</li> </ul>
6. Context for Assessment	<ul style="list-style-type: none"> <li>6.1 Assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> <li>6.2 Assessment of practical skills must be done in a workplace or simulated environment.</li> </ul>

**UNIT OF COMPETENCY : APPLY APPROPRIATE SEALANT/ADHESIVE**

**UNIT CODE : ALT723201**

**UNIT DESCRIPTOR :** This competency unit covers the selection and application of sealant/adhesives.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify appropriate Sealant/adhesive	1.1 <b>Sealant/adhesive</b> selected in line with job requirements and manufacturer's specification 1.2 <b>Sealant/adhesive checking</b> is performed to ensure that product is fit for use.
2. Prepare surface for Sealant/adhesive	2.1 Surface materials are identified as per construction 2.2 Surface is cleaned and free of moisture, dust and other foreign matters to ensure maximum adhesion or seal.
3. Apply sealant/adhesive evenly	3.1 Sealant/adhesive is applied evenly on the surface in line with manufacturer's specification 3.2 Excess sealant/adhesive is removed by sanding or scrapping 3.3 <b>Tools and equipment</b> used to apply sealant/adhesive are appropriate to job requirements 3.4 <b>Safety</b> are observed and PPE are worn in accordance with industry SOP 3.5 <b>Hazards</b> associated with the use of sealant and adhesives are identified.
4. Store/Dispose of sealant/adhesive	4.1 Sealant/adhesive are stored as per prescribed procedure 4.2 Waste are disposed as per workshop SOP

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Sealant/Adhesive	Sealant/adhesive includes: 1.1 Form in Place Gasket (FIPG) 1.2 Ribbon Sealer 1.3 Hametite 1.4 Silicon Body sealer 1.5 Prestite for Auto and Auto Aircon
2. Tools and equipment	Tools and equipment include: 2.1 Putty knife 2.2 Scraper 2.3 Compressor 2.4 Steel brush 2.5 Paint brush 2.6 Rubber hammer 2.7 Hand tools 2.8 Personal protective equipment include: 2.9 Gloves 2.10 Apron 2.11 Safety shoes 2.12 Goggles 2.13 Gas mask
3. Safety	Safety includes: 3.1 Ventilation 3.2 Handling of Flammable/Irritating substances 3.3 Use of Personal Protective Equipment
4. Hazards	Hazard includes: 4.1 Fumes 4.2 Skin irritation 4.3 Burns
5. Adhesive/Sealant checking	Adhesive/Sealant checking includes: 5.1 Expiry date 5.2 Free of contamination 5.3 Cap/Covers 5.4 Tightly closed 5.5 Concentration

## EVIDENCE GUIDE

1. Critical Aspect of Competency	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> <li>1.1 Identified appropriate sealant/adhesives</li> <li>1.2 Prepared surface for sealant/adhesive</li> <li>1.3 Applied sealant/adhesive</li> <li>1.4 Stored unused or dispose of used sealant/adhesive</li> </ol>
2. Underpinning Knowledge and Attitude	<ol style="list-style-type: none"> <li>2.1 OH &amp; S regulations</li> <li>2.2 Safe handling of sealant/adhesive</li> <li>2.3 Industry code of practice</li> <li>2.4 Procedures in sealant/adhesive application</li> <li>2.5 Procedures in interpreting manuals</li> </ol>
3. Underpinning Skills	<ol style="list-style-type: none"> <li>3.1 Handling sealant/adhesive</li> <li>3.2 Applying sealant/adhesive</li> <li>3.3 Sanding the surface</li> <li>3.4 Use of tools, equipment</li> <li>3.5 Mixing of body filler and epoxy base and hardener</li> </ol>
4. Resource Implication	<p>The following resources must be provided:</p> <ol style="list-style-type: none"> <li>4.1 Materials relevant to the activity</li> <li>4.2 Appropriate tools and equipment</li> <li>4.3 Real or simulated workplace</li> </ol>
5. Methods of Assessment	<p>Competency must be assessed through</p> <ol style="list-style-type: none"> <li>5.1 Observation with questioning</li> <li>5.2 Interview related to: <ul style="list-style-type: none"> <li>• Safe and correct use of tools and equipment</li> <li>• Application of adhesive/sealant</li> </ul> </li> </ol>
6. Context for Assessment	<ol style="list-style-type: none"> <li>6.1 Competency elements must be assessed in a safe working environment</li> <li>6.2 Assessment may be done in a workplace or simulated environment</li> </ol>

**UNIT OF COMPETENCY : USE AND APPLY LUBRICANTS/COOLANT**

**UNIT CODE : ALT723204**

**UNIT DESCRIPTOR :** This unit identifies the competencies required to select and apply different types of lubricants.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify types of lubricants/ coolant	1.1 Correct information on <b><i>lubrication schedule</i></b> is accessed and interpreted from appropriate manufacturers specifications <b><i>manuals</i></b> 1.2 Type and quantity of <b><i>lubricants/coolant</i></b> is identified as per job requirements
2. Use and apply lubricants/coolant	2.1 Correct procedure for change of lubricant is identified following manufacturer's specification or manual 2.2 Correct tools and equipment are selected and used in line with job requirements 2.3 Existing lubricants is removed and replaced with specified types and quantity of new materials in line with manufacturer's specification 2.4 Safe procedure and use of <b><i>PPE</i></b> is observed when removing or replacing lubricant 2.5 Used lubricants are disposed in accordance with environmental guidelines 2.6 Work is checked in line with company SOP.
3. Perform housekeeping activities	3.1 <b><i>Tools, equipment</i></b> and materials are properly stored as per company SOP 3.2 Workplace is free from waste materials

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Manuals	1.1 Manufacturer's specification manual 1.2 Periodic Maintenance manual 1.3 Service Manual
2. Lubricants/ Coolant	Kinds of lubricants include: 2.1 Engine oil: <ul style="list-style-type: none"> <li>• Diesel engine oil</li> <li>• Gasoline engine oil</li> </ul> 2.2 Automatic Transmission Fluid <ul style="list-style-type: none"> <li>• Destro II</li> <li>• T4</li> </ul> 2.3 Gear oil lubricants: <ul style="list-style-type: none"> <li>• Oil #90</li> <li>• Oil #140</li> <li>• Oil #30</li> <li>• Oil #40</li> </ul> 2.4 Grease <ul style="list-style-type: none"> <li>• Special (velocity joint Molybdenum disulfate)</li> <li>• Ordinary</li> <li>• Multi-purpose oil</li> <li>• Contact point lubricant (grease)</li> </ul> 2.5 Brake/Clutch System <ul style="list-style-type: none"> <li>• Brake fluid</li> <li>• DOT3</li> </ul> 2.6 Power Steering Fluid <ul style="list-style-type: none"> <li>• Hydraulic Fluid</li> </ul> 2.7 Radiator Coolant <ul style="list-style-type: none"> <li>• Long last coolant</li> </ul> 2.8 A/C Compressor Oil <ul style="list-style-type: none"> <li>• Pag oil</li> </ul>
3. Lubricant Schedule	Schedule for changing oil: 3.1 Kilometers traveled used 3.2 No. of Hours used 3.3 Monthly
4. Tool and equipment	Tools used includes: 4.1 Hand tools 4.2 Oiler 4.3 Oil Dispenser 4.4 Grease gun
5. Personal Protective Equipment (PPE)	PPE include: 5.1 Apron 5.2 Gloves 5.3 Goggles 5.4 Safety shoes

## EVIDENCE GUIDE

<p>1. Critical Aspect of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified types of lubricants and lubrication schedule.</li> <li>1.2 Used and applied lubricants.</li> <li>1.3 Performed housekeeping</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Types/Classification of Lubricants</li> <li>2.2 Identifying lubrication schedule</li> <li>2.3 Cause and Effects of Gear Oil Dilution</li> <li>2.4 Purpose of Lubrication (Problem and effects)</li> <li>2.5 Hazard associated with lubrication</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Handling of oils (Gear, oil, engine oil)</li> <li>3.2 Familiarization/Classification of Lubricants</li> <li>3.3 Lubrication Procedure</li> </ul>
<p>4. Resource Implication</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace: Real or simulated work area</li> <li>4.2 Appropriate tools and equipment</li> <li>4.3 Materials relevant to activity</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency must be assessed through</p> <ul style="list-style-type: none"> <li>5.1 Demonstration with questioning</li> <li>5.2 Written/Oral examination</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency elements must be assessed in a safe working environment</li> <li>6.2 Assessment must be undertaken in accordance with the endorsed industry assessment guidelines</li> <li>6.3 Assessment of underpinning knowledge and skills may be assessed on or off the job</li> </ul>

**UNIT OF COMPETENCY : PERFORM SHOP MAINTENANCE**

**UNIT CODE : ALT723307**

**UNIT DESCRIPTOR :** This unit deals with inspecting and cleaning of work area including tools, equipment and facilities. Storage and checking of tools/equipment and disposal of used materials are also incorporated in this competency

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Inspect/clean tools and work area	1.1 Cleaning solvent used as per workshop/tools <b><i>cleaning requirement</i></b> 1.2 <b><i>Work area</i></b> is checked and cleaned 1.3 Wet surface/spot in work area is wiped and dried
2. Store/arrange tools and shop equipment	2.1 Tools/equipment are checked and stored in their respective shelves/location 2.2 Corresponding labels are posted and visible 2.3 Tools are safely secured and logged in the records
3. Dispose wastes/used lubricants	3.1 Containers for used lubricants are visibly labeled 3.2 Wastes/used lubricants are disposed as per workshop SOP
4. Report damaged tools/equipment	4.1 Complete inventory of tools/equipment is maintained 4.2 Damaged tools/equipment/facilities are identified and repair recommendation is given 4.3 Reports prepared has no error/discrepancy

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Work Area	Work areas include: <ol style="list-style-type: none"> <li>1.1 Workshop areas for servicing/repairing light and/or heavy vehicle and/or plant transmissions and/or outdoor power equipment</li> <li>1.2 Open workshop/garage and enclosed, ventilated office area</li> <li>1.3 Other variables may include workshop with:               <ul style="list-style-type: none"> <li>• Mess hall</li> <li>• Wash room</li> <li>• Comfort room</li> </ul> </li> </ol>
2. Cleaning requirement	<ol style="list-style-type: none"> <li>2.1 Cleaning solvent</li> <li>2.2 Inventory of supplies, tools, equipment, facilities</li> <li>2.3 List of mechanics/technicians</li> <li>2.4 Rags</li> <li>2.5 Broom</li> <li>2.6 Map</li> <li>2.7 Pail</li> <li>2.8 Used oil container</li> <li>2.9 Oiler</li> <li>2.10 Dust/waste bin</li> </ol>
3. Manuals	<ol style="list-style-type: none"> <li>3.1 Vehicle/plant manufacturer specifications</li> <li>3.2 Company operating procedures</li> <li>3.3 Industry/Workplace Codes of Practice</li> <li>3.4 Product manufacturer specifications</li> <li>3.5 Customer requirements</li> <li>3.6 Industry Occupational Health &amp; Safety</li> </ol>
4. Company standard operating procedure	Wearing of Personal protective equipment include: <ol style="list-style-type: none"> <li>4.1 Gloves</li> <li>4.2 Apron</li> <li>4.3 Goggles</li> <li>4.4 Safety shoes</li> </ol>

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Cleaned workshop tools/facilities</li> <li>1.2 Maintained equipment, tools and facilities</li> <li>1.3 Disposed wastes and used lubricants/fluid as per required procedure</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 5S or TQM</li> <li>2.2 Service procedures</li> <li>2.3 Relevant technical information</li> <li>2.4 Safe handling of Equipment and tools</li> <li>2.5 Vehicle safety requirements</li> <li>2.6 Workshop policies</li> <li>2.7 Personal safety procedures</li> <li>2.8 Fire Extinguishers and prevention</li> <li>2.9 Storage/Disposal of Hazardous/flammable materials</li> <li>2.10 Positive Work Values (Perseverance, Honesty, Patience, Attention to Details)</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Handling/Storing of tools/equipment/supplies and material</li> <li>3.2 Cleaning grease/lubricants</li> <li>3.3 Disposing of wastes and fluid</li> <li>3.4 Preparing inventory of s/m and tools and equipment</li> <li>3.5 Monitoring of s/m and tools/equipment</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace: Real or simulated work area</li> <li>4.2 Appropriate Tools &amp; equipment</li> <li>4.3 Materials relevant to the activity</li> </ul>
<p>5. Method of Assessment</p>	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Written/Oral Questioning</li> <li>5.2 Demonstration</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency must be assessed on the job or simulated environment.</li> <li>6.2 The assessment of practical skills must take place after a period of supervised practice and repetitive experience.</li> </ul>

**UNIT OF COMPETENCY : INTERPRET/DRAW TECHNICAL DRAWING**

**CODE : ALT311205**

**UNIT DESCRIPTOR : This unit identifies the competencies required to draw/interpret basic trade drawing**

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	<i>Italicized</i> terms are elaborated in the Range of Variables
1. Interpret technical drawing	1.1 Components, assemblies or objects recognized as required 1.2 Dimensions identified as appropriate to the field of employment 1.3 Instructions identified and followed as required 1.4 Material and other <b>consumable</b> requirements identified as required 1.5 Symbols recognized as appropriate in <b>drawing</b>
2. Select correct technical drawing	2.1 Drawing checked and validated against job requirements or equipment 2.2 Drawing version checked and validated according to the <b>Manual</b>
3. Apply freehand sketching	3.1 Correct freehand sketching is produced using the necessary <b>tools and materials</b>

### **RANGE OF VARIABLES**

<b>VARIABLE</b>	<b>RANGE</b>
1. Drawing	1.1 Drawing symbols 1.2 Alphabet of lines 1.3 Orthographic views 1.3.1 Front view 1.3.2 Right side view/left side view 1.3.3 Top view 1.3.4 Pictorial 1.4 Schematic diagram
2. Manual	2.1 technical drawing manual 2.2 manufacturers schematic diagram
3. Consumables	3.1 drawing plate 3.2 pencil and eraser 3.3 scotch tape
4. Tools and materials	4.1 compass 4.2 divider 4.3 rulers 4.4 triangles 4.5 drawing tables 4.6 computer

## EVIDENCE GUIDE

1. Critical Aspect of Competency	Assessment requires evidence that the candidate: 1.1 Interpreted technical drawing 1.2 Selected correct technical drawing 1.3 Applied freehand sketching
2. Underpinning Knowledge and Attitudes	2.1 Drawing standard symbols 2.2 Safe handling of tools and consumables 2.3 Identification of types of drawing
3. Underpinning Skills	3.1 Draw/interpret orthographic drawing 3.2 Handling of drawing instruments
4. Resource Implication	The following resources must be provided: 4.1 Drawing room 4.2 Appropriate tools 4.3 Materials relevant to activity
5. Method of Assessment	Competency must be assessed through: 5.1 Observation with questioning 5.2 Written/Oral examination 5.3 Presentation of Finished drawing
6. Context for Assessment	6.1 Must be assessed in a drawing room or any simulated places 6.2 Assessment must be given according to industry standard

**UNIT OF COMPETENCY : PREPARE JOB ESTIMATE/COSTING**

**CODE : ALT311204**

**UNIT DESCRIPTOR :** This competency unit covers the knowledge, skills and attitude in estimating/costing automotive repair.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify nature/scope of work	1.1 Effective <b>communication</b> skills are applied to determine the nature and scope of work to be undertaken 1.2 Extent of service to be rendered is determined and documented in line with standard operating procedures (SOP)
2. Prepare and present estimate	2.1 Type and quantity of supplies, materials and labor required to perform work are identified in line with job requirements 2.2 Cost of supplies, materials are obtained from <b>suppliers</b> 2.3 <b>Total cost</b> of required services is calculated in line with SOP 2.4 Estimate is presented to customer in line with SOP.

#### **RANGE OF VARIABLES**

<b>VARIABLE</b>	<b>RANGE</b>
1. Communication	Communication includes: 1.1 Listening to customer 1.2 Speaking with suppliers, customers and co-workers 1.3 Questioning
2. Suppliers	Suppliers includes: 2.1 Distributors 2.2 Managers 2.3 Proprietors
3. Cost	Costs include: 3.1 Materials 3.2 Labor 3.3 Overhead

## EVIDENCE GUIDE

1. Critical aspect of competency	Assessment requires evidence that the candidate 1.1 Identified nature/scope of work 1.2 Prepared and presented estimate
2. Underpinning knowledge and attitudes	2.1 Consumer mathematics 2.2 Replaceable/Fabricated Materials or Spare parts in a vehicle 2.3 Automotive Repair Procedures and Techniques 2.4 Job estimates
3. Underpinning skills	3.1 Computing using the Four Mathematical Operations 3.2 Estimating repair works and activities
4. Resource implication	The following resources must be provided: 4.1 Appropriate tools such as calculator, paper, pen, and other measuring instruments relevant to activity
5. Methods of assessment	Competency must be assessed through: 5.1 Observation with questioning 5.2 Presentation of Finished drawing
6. Context for assessment	6.1 Competency must be assessed in a room or any simulated places 6.2 Assessment must be given according to industry standard

## CORE COMPETENCIES

**UNIT OF COMPETENCY :** **PERFORM MINOR MAINTENANCE AND SERVICING ON VEHICLES CLASSIFIED UNDER LTO RESTRICTION CODES 6 UP TO 8**

**CODE NO. :** **ALT723349**

**UNIT DESCRIPTOR :** This unit involves the skills, knowledge and attitudes required to carry out basic servicing and maintenance on vehicles classified under LTO Restriction codes 6-8. It also includes the action to implement the vehicle manufacturer's specifications for routine cleaning checks and maintenance and ensure that the vehicle is operational to the requirements of both the workplace and the relevant road and traffic authority.

ELEMENT	PERFORMANCE CRITERIA
	<i>Italicized</i> terms are elaborated in the Range of Variables
1. Clean vehicle unit	<p>1.1 Vehicle is cleaned as per prescribed procedures using appropriate <b><i>cleaning supplies, tools/ equipment</i></b> and according to <b><i>occupational health and safety (OHS)</i></b> rules.</p> <p>1.2 Wastes are disposed of as per relevant ordinance, rules or law.</p>
2. Maintain and service the vehicle system	<p>2.1 <b><i>Minor routine checks</i></b> are undertaken based on manufacturer's manual.</p> <p>2.2 <b><i>Minor routine repair and servicing</i></b> are undertaken in accordance with occupational health and safety procedures and manufacturer's manual.</p> <p>2.3 Brakes are inspected and appropriate action is undertaken in accordance with manufacturer's specifications.</p> <p>2.4 Complex repair and service requirements are identified and referred following workplace procedures.</p> <p>2.5 Records of routine servicing, maintenance and repairs are kept and updated in accordance with workplace procedures</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Cleaning supplies	Cleaning supplies may include but are not limited to: <ol style="list-style-type: none"> <li>1.1 Soap</li> <li>1.2 Rags</li> <li>1.3 Oil</li> <li>1.4 Air freshener</li> <li>1.5 Polish</li> <li>1.6 Water</li> </ol>
2. Cleaning Tools and Equipment	<ol style="list-style-type: none"> <li>2.1 Vacuum cleaner</li> <li>2.2 Steam cleaner</li> <li>2.3 Mop and basket</li> <li>2.4 Pail</li> <li>2.5 Broom</li> <li>2.6 Hose</li> <li>2.7 Pressure Washer</li> </ol>
3. Routine Check	Routine checks include but are not limited to the following vehicle components: <ol style="list-style-type: none"> <li>3.1 Battery</li> <li>3.2 Tire air pressure</li> <li>3.3 Water level</li> <li>3.4 Lights</li> <li>3.5 Horn</li> <li>3.6 Mirrors</li> <li>3.7 Propeller</li> <li>3.8 Bolts and nuts tightness</li> <li>3.9 Brake fluid</li> <li>3.10 Oil level</li> <li>3.11 Fan belt</li> </ol>
4. Minor routine repairs	Minor routine repairs include but are not limited to the replacement of: <ol style="list-style-type: none"> <li>4.1 Blown bulbs in vehicle lights</li> <li>4.2 Broken fan belt</li> <li>4.3 Blown fuse</li> <li>4.4 Broken side mirrors</li> <li>4.5 Rear tail-light lens</li> <li>4.6 Tires</li> <li>4.7 Broken coolant hose</li> </ol>
5. Minor routine servicing	Minor routine servicing may include but are not limited to the following: <ol style="list-style-type: none"> <li>5.1 Topping up of water/coolant levels and brake fluid</li> <li>5.2 Change/topping of engine oils</li> <li>5.3 Air pressure set of tires</li> <li>5.4 Addition of gear oil</li> <li>5.5 Cleaning of battery terminals</li> </ol>
6. Occupational Health and Safety	<ol style="list-style-type: none"> <li>6.1 Use of personal protective equipment such as:               <ul style="list-style-type: none"> <li>• Gloves</li> <li>• Gas mask</li> <li>• Brush</li> </ul> </li> <li>6.2 Appropriate space with ventilation</li> <li>6.3 Provision of fire extinguisher in work area</li> </ol>

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate</p> <ul style="list-style-type: none"> <li>1.1 Diagnosed basic vehicle faults and made adjustment/repairs</li> <li>1.2 Carried out routine servicing and maintenance of vehicle system</li> <li>1.3 Identified complex servicing and maintenance problems</li> <li>1.4 Demonstrated safety, environmental and hazard control precautions and procedures during routine maintenance operations</li> <li>1.5 Communicated effectively with others in carrying out vehicle maintenance</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Relevant OHS and pollution control procedures</li> <li>2.2 Procedure for checking and routine service and maintenance of a vehicle</li> <li>2.3 Problems that may occur during routine servicing and maintenance of a vehicle and appropriate actions and solutions</li> <li>2.4 Faults and irregularities that may occur in vehicles.</li> <li>2.5 Principles of operation of vehicle system such as electrical system, fuel system, cooling system, steering system, exhaust system, tires, brakes</li> <li>2.6 Basic fault finding procedures required during routine servicing and maintenance of vehicles</li> <li>2.7 Uses of tools materials, and parts for routine servicing and maintenance</li> <li>2.8 Positive Work Values (Honesty, Quality, Common Sense Patience, Concern for Safety)</li> <li>2.9 5 S (Sort, Systematize, Sweep, Standardize, Self Discipline)</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Recognizing and diagnosing vehicle faults and irregularities</li> <li>3.2 Performing housekeeping</li> <li>3.3 Writing and documenting simple report</li> <li>3.4 Communicating skills</li> <li>3.5 Handling of tools and materials</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Articulated vehicles</li> <li>4.2 Supplies and materials relevant to the task</li> <li>4.3 Workplace for conducting routine servicing and maintenance</li> <li>4.4 Room for written examination</li> </ul>
<p>5. Method of Assessment</p>	<p>Competency must be assessed through</p> <ul style="list-style-type: none"> <li>5.1 Observation with Questioning</li> <li>5.2 Demonstration with Questioning</li> <li>5.3 Interview</li> <li>5.4 Written examination</li> </ul>
<p>6. Context for Assessment</p>	<p>Practical assessment must be conducted at TESDA accredited assessment centers and/or in an appropriate work situation</p>

**UNIT OF COMPETENCY : PERFORM PRE- AND POST OPERATION PROCEDURES ON VEHICLES CLASSIFIED UNDER LTO RESTRICTION CODES 6 UP TO 8**

**UNIT CODE : ALT832305**

**UNIT DESCRIPTOR :** This unit describes the outcomes required in performing procedures before operating vehicles classified under LTO restriction codes 6 up to 8.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Perform visual check vehicle	1.1 <b>Vehicle serviceable parts</b> are checked in accordance with vehicle checklist and manufacturer’s procedures. 1.2 <b>Walk-around check</b> is performed with vehicle checklist and with engine stopped/not running. 1.3 Electrical terminal is checked in accordance with manufacturer’s procedures.
2. Perform “BLOWAF” check	2.1 <b>“BLOWAF” check</b> is performed in accordance with standard operating procedures. 2.2 <b>Deficiencies</b> or findings in BLOWAF check are identified and appropriate corrective measures are undertaken in accordance with manufacturer’s specification. 2.3 Abnormal conditions are noted in checklist and reported to <b>authorized person</b> .
3. Perform operation check	3.1 Starting/running check is performed in accordance with manufacturer’s specifications. 3.2 Operating condition of instruments, gauges, indicators and controls are performed in accordance with manufacturer’s recommendation. 3.3 Operating condition of air brake and steering controls are checked in accordance with manufacturer’s recommendation. 3.4 Walk-around check, with engine running, is performed in accordance with manufacturer’s recommendation. 3.5 <b>Safety devices and accessories</b> are checked for proper functions in accordance with safe operating procedures.
4. Perform post-operation procedures	4.1 Vehicle is parked and engine turned off after productive operation in accordance with company rules and regulations. 4.2 Vehicle controls are set into neutral position and parking brakes are engaged according to manufacturer’s operations manual. 4.3 <b>Safety locks</b> and brakes are all set/engaged in accordance with operator’s manual. 4.4 Walk-around inspection check is re-conducted while doing engine cool down 4.5 Daily vehicle time record/report/inspection is accomplished/submitted according to company rules and regulations

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Vehicle serviceable parts	1.1 Air cleaner 1.2 Battery terminals/Connection 1.3 Belt 1.4 Tires 1.5 Grease/lube points 1.6 Fuel water separator 1.7 Air tank 1.8 Radiator 1.9 Mirrors 1.10 Lights (signal, back, tail, head) 1.11 Air hose and connectors
2. Walk-around check	2.1 Tires 2.2 Leaks (oil, water, air, fluid) 2.3 Worn out/damaged parts 2.4 Fluid levels 2.5 Loose parts/connections 2.6 Missing parts 2.7 Gauges and controls 2.8 Safety devices (seat belt, EWD, blinkers) 2.9 Unusual sounds 2.10 Window glass 2.11 Passenger's seat condition 2.12 Curtains 2.13 Baggage compartment
3. <u>B</u> <u>L</u> <u>O</u> <u>W</u> <u>A</u> <u>F</u> check	3.1 <b>B</b> attery (starting and charging system) 3.2 <b>L</b> ight (lighting system) 3.3 <b>O</b> il (lubricating system) 3.4 <b>W</b> ater (cooling system) 3.5 <b>A</b> ir (intake and exhaust system) 3.6 <b>F</b> uel (fuel system)
4. Deficiencies	4.1 Fluid level (oil, coolant, electrolyte/distilled water) 4.2 Air pressure (tire and brake) 4.3 Defective light bulbs, lens and reflector 4.4 Malfunctioning air-conditioning system
5. Authorized person	5.1 Supervisor 5.2 Dispatcher 5.3 Maintenance personnel 5.4 Conductor
6. Safety devices and accessories	6.1 Blinkers 6.2 Safety belt 6.3 Windshield guard 6.4 Warning light siren 6.5 Early Warning Device (EWD)
7. Safety locks	7.1 Power Door and lock 7.2 Maxi Brake 7.3 Differential lock 7.4 Steering lock 7.5 Parking Brakes

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Performed visual check of articulated vehicle</li> <li>1.2 Performed “BLOWAF” inspection</li> <li>1.3 Performed operation check</li> <li>1.4 Performed post operation procedures</li> </ul>
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> <li>2.1 Kinds of Articulated vehicle and capacity</li> <li>2.2 Kinds of Busses and capacity</li> <li>2.3 Types of Straight Trucks and capacity</li> <li>2.4 Kinds of Passengers and Loads</li> <li>2.5 Controls, instruments, indicators and their usage</li> <li>2.6 Principle of operation of electrical, pneumatics and hydraulic systems</li> <li>2.7 Lubricants and oils</li> <li>2.8 Basic mathematics (MDAS)</li> <li>2.9 Local and national road traffic regulations</li> <li>2.10 Starting and shutdown procedures</li> <li>2.11 Manufacturer’s operation manual</li> <li>2.12 Job site and work conditions</li> <li>2.13 Documentation (tickets, forms, checklists ,receipts, reports)</li> <li>2.14 Pre-and post-operation procedures</li> <li>2.15 Positive work values (honesty, courtesy, cost/time/quality consciousness, etc.)</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Communication skills</li> <li>3.2 Performing pre- and post-operation procedures on vehicle with standard or special attachments</li> <li>3.3 Accomplishing pre- and post-operation checklist</li> <li>3.4 Handling Passengers</li> <li>3.5 Computation skills on fare, distances and time</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Articulated vehicle</li> <li>4.2 Appropriate work area for the activity</li> <li>4.3 Tools, materials and equipment</li> <li>4.4 Vehicle operator’s manual</li> </ul>
<p>5. Method of Assessment</p>	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Written examination</li> <li>5.2 Observation with questioning</li> <li>5.3 Demonstration with questioning</li> <li>5.4 Portfolio</li> </ul>
<p>6. Context for Assessment</p>	<p>Competency must be assessed in the workplace or in a simulated workplace environment accredited by TESDA.</p>

**UNIT OF COMPETENCY : OBEY AND OBSERVE TRAFFIC RULES AND REGULATIONS**

**CODE : ALT832303**

**UNIT DESCRIPTOR :** This unit involves the skills, knowledge and attitudes required in following traffic rules and regulations while driving articulated vehicle.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Observe traffic signs and road markers	1.1 <b>Traffic signs</b> and <b>road markers</b> are identified and followed in accordance with concerned <b>traffic authorities</b> .
2. Obey traffic rules and regulations	2.1 <b>Traffic rules and regulations</b> are identified and followed in accordance with concerned traffic authorities. 2.2 License and registrations are maintained as prescribed by law. 2.3 Driver <b>outfit/attire</b> is worn as prescribed by law.
3. Practice courtesy	3.1 Positive work values are demonstrated as per code of ethics of drivers 3.2 Complaints are responded and handled with respect based on driver's code of ethics
4. Respect traffic enforcers and other traffic management personnel	4.1 Traffic authority instructions are complied with as prescribed by law. 4.2 Traffic violation tickets/receipts issued by Traffic enforcers are accepted and appropriate action is taken.

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Traffic signs	Traffic signs include but are not limited to: <ul style="list-style-type: none"> <li>1.1 No blowing of horns</li> <li>1.2 Yield</li> <li>1.3 No Parking</li> <li>1.4 One way</li> <li>1.5 No U-turn</li> </ul>
2. Road Markers	<ul style="list-style-type: none"> <li>2.1 Merging traffic</li> <li>2.2 No overtaking</li> <li>2.3 Pedestrian lane</li> <li>2.4 Total stop</li> </ul>
3. Traffic rules and regulations	Traffic rules and regulations include: <ul style="list-style-type: none"> <li>3.1 Stalled vehicle</li> <li>3.2 Illegal parking</li> <li>3.3 Wearing of safety belts</li> <li>3.4 Observing the Truck Ban Rules</li> <li>3.5 Driving license/registration/franchise/Official receipt and certificate of registration (ORCR)</li> <li>3.6 No using of cellphone while driving</li> <li>3.7 Avoiding driving under the influence of drugs or alcohol</li> </ul>
4. Prescribed Attire/Outfit	Proper attire or outfit prescribed by law include but are not limited to: <ul style="list-style-type: none"> <li>4.1 Company-prescribed attire</li> <li>4.2 Shoes appropriate for driving</li> </ul>

## EVIDENCE GUIDE

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate</p> <ul style="list-style-type: none"> <li>1.1 Followed traffic signs and road markers</li> <li>1.2 Obeyed traffic rules and regulations</li> <li>1.3 Practiced courtesy and good communication</li> <li>1.4 Respected traffic enforcers and other traffic management units.</li> </ul>
2. Underpinning Knowledge and Attitude	<ul style="list-style-type: none"> <li>2.1 Traffic signs and symbols</li> <li>2.2 Road markers</li> <li>2.3 Traffic rules and regulations</li> <li>2.4 Defensive driving techniques</li> <li>2.5 Positive work values</li> <li>2.6 Driver's Code of ethics</li> <li>2.7 Different Traffic Enforcers</li> <li>2.8 Traffic violations and penalties</li> <li>2.9 Good grooming</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Communication skills</li> <li>3.2 Interpersonal skills</li> <li>3.3 Managing conflict</li> </ul>
4. Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Articulated vehicle with appropriate tools/instruments for actual performance of works</li> <li>4.2 Ample space for driving including traffic signs and symbols for driving and maneuvering the articulated vehicle</li> <li>4.3 Well lighted and ventilated room with table and chairs for written/oral assessment</li> </ul>
5. Method of Assessment	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Observation with questioning</li> <li>5.2 Demonstration with questioning</li> <li>5.3 Interview</li> <li>5.4 Written or Oral examination</li> </ul>
6. Context for Assessment	<ul style="list-style-type: none"> <li>6.1 Competency must be assessed in actual workplace or simulated environment</li> <li>6.2 Assessment of competence must comply with the assessment requirements of the relevant Road and traffic control Authority</li> </ul>

**UNIT OF COMPETENCY : OBSERVE ROAD HEALTH AND SAFETY PRACTICES**

**UNIT CODE : ALT832308**

**UNIT DESCRIPTOR :** This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety while driving.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify and evaluate hazards and risks	1.1 Safety <b>regulations</b> and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 1.2 Effects of <b>driving environment hazards/risks</b> and their corresponding indicators are identified to minimize or eliminate risk to passengers, co-workers, workplace and environment in accordance with organization procedures 1.3 Contingency measures during <b>emergencies</b> are recognized and established in accordance with organization procedures 1.4 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation
2. Control hazards and risks	2.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed 2.2 Procedures for dealing with accidents, fire and emergencies are followed in accordance with organization OHS policies 2.3 Space management and defensive driving techniques are practiced to avoid accidents. 2.4 Appropriate assistance is provided in the event of an emergency in accordance with established protocol
3. Maintain fitness for driving	3.1 <b>Standards of health, fitness and well-being</b> for driving on the road are maintained and adhered to at all times 3.2 LTO/LTFRB and company policies related to smoking, alcohol and prohibited drug use are complied with 3.3 Fatigue <b>management strategies</b> are applied to ensure concentration and alertness while driving

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Regulations	May include but are not limited to: 1.1 Registration, driving license and other relevant permits 1.2 Use of safety belt 1.3 Availability of EWD 1.4 Observance of franchise route 1.5 Company uniform 1.6 Compliance with vehicle emission standards
2. Driving environment hazards/risks	May include but are not limited to: 2.1 overhead cables 2.2 stalled vehicles and other road obstruction 2.3 excavation and road repairs 2.4 flood 2.5 heavy traffic volume 2.6 accidents 2.7 heavy rains and typhoons 2.8 Fog/smog 2.9 uneven loads 2.10 slippery roads 2.11 winding and zigzag roads 2.12 blind corners 2.13 humps 2.14 unattended children along streets 2.15 stray animals 2.16 reckless and uncooperative drivers 2.17 fire on vehicle 2.18 loose stones 2.19 mental and physical fatigue
3. Emergencies	May include but are not limited to: 3.1 Vehicle collision and crash 3.2 Crime incident (hold-up, kidnapping and related crimes) 3.3 Hit-and-run 3.4 Fire caused by engine overheating or faulty electric wiring
4. Standards of health, fitness and well-being	4.1 health testing at intervals 4.2 drugs and alcohol use 4.3 stress 4.4 communicable diseases 4.5 adverse personal hygiene 4.6 vision, peripheral (70°) color blindness 4.7 hearing ability (hear whisper from 5 ft.)
5. Fatigue management strategies	5.1 assessment and planning of routes and schedules to minimize fatigue 5.2 making of lifestyle choices which promote the effective long-term fatigue management 5.3 avoiding multiple jobs 5.4 monitoring and taking action to minimize fatigue due to: 5.4.1 lifestyle factors such as: sleep patterns, alcohol and drug use, quantity and timing of food and drink, and opportunities for relaxation with family and friends 5.4.2 personal or biological factors such as: state of mental and/or physical health, inadequate sleep, sleep disorders, emotional stress, family responsibilities, relationship difficulties, inadequate competence to complete work tasks, and circadian rhythms

## EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Explained clearly established safety and hazard control practices and procedures</li> <li>1.2 Identified driving hazards/risks in the workplace its effects and corresponding indicators</li> <li>1.3 Recognized contingency measures during emergencies</li> <li>1.4 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace</li> <li>1.5 Applied procedures in dealing with emergencies</li> <li>1.6 Applied space management and defensive driving techniques</li> <li>1.7 Maintained fitness for driving</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Relevant road rules, regulations, permit and license requirements</li> <li>2.2 Relevant OHS and environmental procedures, practices and regulations</li> <li>2.3 Driving hazards and related defensive driving techniques</li> <li>2.4 Road signs and symbols</li> <li>2.5 Space management</li> <li>2.6 Defensive driving techniques</li> <li>2.7 Organization safety and health protocol</li> <li>2.8 Procedure to be followed in the event of a driving emergency</li> <li>2.9 Causes and effects of fatigue on drivers</li> <li>2.10 Fatigue management strategies</li> <li>2.11 Personal hygiene practices</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting instructions, procedures, information and signs relevant to driving</li> <li>3.2 Practice of personal hygiene</li> <li>3.3 Hazards/risks identification and control skills</li> <li>3.4 Interpersonal skills</li> <li>3.5 Communication skills</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace or assessment location</li> <li>4.2 OHS personal records</li> <li>4.3 PPE</li> <li>4.4 Health records</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Portfolio Assessment</li> <li>5.2 Interview</li> <li>5.3 Case Study/Situation</li> </ul>
<p>6. Context for Assessment</p>	<p>Competency may be assessed in the work place or in a simulated work place setting</p>

**UNIT OF COMPETENCY :** **IMPLEMENT AND COORDINATE ACCIDENT EMERGENCY PROCEDURES**

**UNIT CODE :** **ALT832304**

**UNIT DESCRIPTOR :** This unit involves the skills, knowledge and attitudes required in responding to emergency incidents, follow-up support and assistance and communicate to concerned individual during emergency.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Respond to emergencies	1.1 <b>Emergency</b> and potential emergency situations are identified and assessed based on emergency procedure. 1.2 <b>Actions</b> are prioritized and provided based on the criticality of the emergency situation. 1.3 Incident reports are prepared in accordance with regulatory and workplace procedures 1.4 <b>Responsibilities</b> are fulfilled in accordance with emergency procedures and/or regulatory requirements
2. Arrange follow-up support and assistance	2.1 Medical assistance and support is arranged in accordance with workplace procedures 2.2 First aid is applied in accordance with medical procedure 2.3 Passenger needs are identified and provided based on emergency situation.

### RANGE OF VARIABLES

VARIABLE	RANGE
1. Emergency	Emergency situation and incidents may include the following but not limited to: 1.1 Vehicle collision 1.2 Crime incidents (hold-up, kidnapping and related crimes) 1.3 Hit and run 1.4 Fire resulted from engine overheating or faulty electric wiring
2. Responsibilities	2.1 Reporting to police authority 2.2 Facilitate Insurance claim 2.3 Informing victim's relatives 2.4 Respond to investigation and authority inquiry
3. Action	3.1 Facilitating medical assistance 3.2 Transporting of injured passenger to the nearest medical facility 3.3 Transporting of road crime victim to police station 3.4 Giving reminders to passengers while on board the public transport vehicle 3.5 Providing assistance in controlling the site both prior to and following arrival of emergency services

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate</p> <ul style="list-style-type: none"> <li>1.1 Responded to emergency situations</li> <li>1.2 Arranged follow-up support and assistance</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Relevant OHS and environmental procedures and regulations</li> <li>2.2 Kinds of emergency situations</li> <li>2.3 Procedure to be followed in the event of emergency</li> <li>2.4 Problem that may arise during emergency situations</li> <li>2.5 First aid practices</li> <li>2.6 Kinds of body injury and how to deal with them</li> <li>2.7 Positive work values (Honesty, Presence of mind, Compassion, etc.)</li> </ul>
<p>3 Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Appropriate reporting and preparing of necessary documentation to authority and medical personnel</li> <li>3.2 Handling injured person</li> <li>3.3 Transporting injured persons</li> <li>3.4 Handling and use of fire extinguishers</li> <li>3.5 Following emergency procedures</li> <li>3.6 Handling crime situations</li> </ul>
<p>4 Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>4.1 Simulation equipment and materials used for demonstrating emergency situation</li> <li>4.2 Vehicle unit</li> <li>4.3 A well-ventilated and lighted room with table and chairs for written/oral examination</li> </ul>
<p>5 Method of Assessment</p>	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Demonstration of the task in implementing and coordinating accident-emergency procedures</li> <li>5.2 Interview</li> <li>5.3 Written/oral exam</li> </ul>
<p>6 Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency must be assessed in actual workplace or simulated environment</li> <li>6.2 Assessment of competence must comply with the assessment requirements of the relevant Road and traffic control Authority</li> </ul>

**UNIT OF COMPETENCY : DRIVE ARTICULATED VEHICLE**

**CODE NO. : ALT832308**

**UNIT DESCRIPTOR :** This unit involves the skills, knowledge and attitudes required to drive an articulated vehicle safely including handling of cargoes, systematic and efficient control of vehicle functions, monitoring of traffic and road conditions, management of vehicle condition and effective handling management of hazardous materials and situations.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Perform articulated vehicle pre-starting and warm-up	1.1 <b>Articulated vehicle inspection</b> is performed as per manufacturer's specification 1.2 <b>Safety harness/devices</b> and <b>tools</b> are checked according to LTO/LTFRB requirements 1.3 Warm up of <b>articulated vehicle</b> is performed as per manufacturer's manual
2. Drive articulated vehicle	2.1 Articulated vehicle is driven in accordance with <b>traffic rules and regulations</b> and manufacturer's instruction 2.2 <b>Driving hazards</b> are identified and/or anticipated and avoided or controlled through defensive driving as per standard operating procedures. 2.3 The Articulated vehicle is parked, shut down and secured in accordance with manufacturer's specifications, traffic regulations and workplace procedures 2.4 <b>Cargoes / loads</b> are secured and transported up to the route assigned per LTFRB regulations 2.5 Driving is performed according to the restriction and condition stated in the official receipt license and within the <b>occupational health and safety standards</b> (OHS). 2.6 Trip ticket / way bill is secured during the trip as per company procedure 2.7 Accidents and emergencies encountered are reported as per company procedure
3. Monitor and maintain vehicle performance	3.1 Defective or irregular performance or malfunctions are monitored and reported to the appropriate person/authority. 3.2 Minor vehicle maintenance is performed in accordance with manufacturer's instruction 3.3 Vehicle records are maintained/updated in accordance with workplace procedures

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Vehicle inspection	1.1 <b>Battery</b> (starting and charging system) 1.2 <b>Light</b> (lighting system) 1.3 <b>Oil</b> (lubricating system) 1.4 <b>Water</b> (cooling system) 1.5 <b>Air</b> (intake and exhaust system) 1.6 <b>Fuel</b> (fuel system)
2. Articulated Vehicle	2.1 Tractor Head with Trailer 2.1.1 Single Axle 2.1.2 Double Axle
3. Cargoes	3.1 Container van 3.2 Loose Cargoes 3.3 Tanker
4 Safety harness/devices tools materials and spare parts	4.1 Seat belt 4.2 Early Warning Device 4.3 Handtools (Wrench, pliers, screwdriver, early warning device, jack, spare tires) 4.4 Flashlights or emergency lighting device 4.5 Consumable materials and spare parts such as <ul style="list-style-type: none"> <li>• Rags</li> <li>• Fan belt</li> <li>• Fuse</li> <li>• Electrical tapes</li> <li>• Brake fluid</li> <li>• Motor oil</li> </ul> 4.6 Chain with binder 4.7 Strap belt 4.8 Wooden wedge 4.9 Pole
5 Traffic regulations	5.1 Registration, driving license and other relevant permits 5.2 Use of seat belt 5.3 Availability of EWD 5.4 Observance of franchise route 5.5 Company uniform 5.6 Compliance with vehicle emission standards
6 Driving hazards	6.1 Overhead cables 6.2 Stalled vehicles and other road obstruction 6.3 Excavation and road repairs 6.4 Flood 6.5 Heavy traffic volume 6.6 Accidents 6.7 Heavy rains and typhoons 6.8 Fog/smog 6.9 Uneven loads 6.10 Slippery roads 6.11 Winding and zigzag road 6.12 Blind corners 6.13 Humps 6.14 Unattended children along streets 6.15 Stray animals 6.16 Reckless and uncooperative drivers 6.17 Loose stones 6.18 Mental and physical fatigue
7 Occupational Health & Safety	7.1 Safety in handling vehicle and cargoes while driving 7.2 Safety on road and traffic management including management of pedestrians 7.3 Use of personal protective equipment and devices such as uniform, gas mask, gloves, sunglasses, safety shoes 7.4 Use of seat belt and early warning devices

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate</p> <ul style="list-style-type: none"> <li>1.1 Performed pre-operational and warm up</li> <li>1.2 Drove articulated vehicle</li> <li>1.3 Transported cargoes/loads to destination.</li> <li>1.4 Monitored and maintained vehicle performance</li> <li>1.5 Followed OHS and environmental protection procedures and regulations</li> <li>1.6 Followed emergency procedures</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Relevant OHS and environmental procedures and regulations</li> <li>2.2 Parts of articulated vehicle and its functions</li> <li>2.3 Types of load or cargo</li> <li>2.4 Procedure on how to drive the articulated vehicle</li> <li>2.5 Procedure to be followed in the event of emergency and road related crimes</li> <li>2.6 Engine power management and safe driving strategies</li> <li>2.7 Fatigue management techniques</li> <li>2.8 Principle of stress management when driving a vehicle</li> <li>2.9 Traffic rules and regulations</li> <li>2.10 Kinds of traffic violations</li> <li>2.11 Positive work values (Honesty, Patience, Perseverance, Courtesy, etc.)</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Computing distances and travel time</li> <li>3.2 Managing fatigue while driving</li> <li>3.3 Reading/Interpreting traffic signs and symbols and road advisory</li> <li>3.4 Maintaining proper distance and speed</li> <li>3.5 Responding to road-related accidents and crimes encountered</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Articulated vehicle with appropriate tools/instruments for actual performance of works</li> <li>4.2 Driver's Manual</li> <li>4.3 Ample space for driving including traffic signs and symbols for driving and maneuvering the articulated vehicle</li> </ul>
<p>5. Method of Assessment</p>	<p>Competency must be assessed through</p> <ul style="list-style-type: none"> <li>5.1 Written test</li> <li>5.2 Observation with Questioning</li> <li>5.3 Demonstration with Questioning</li> <li>5.4 Interview</li> <li>5.5 Portfolio</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in actual workplace or simulated environment accredited by TESDA</li> <li>6.2 Assessment of competence must comply with the assessment requirements of the relevant Road and traffic control Authority</li> </ul>

## SECTION 3 TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for DRIVING (Articulated Vehicle) NC III

### 3.1 CURRICULUM DESIGN

Course Title: **DRIVING (ARTICULATED VEHICLE)**

NC LEVEL: **NC III**

Training Nominal Hours: **20 Hours** (Basic competencies)  
**20 Hours** (Common Competencies)  
**68 Hours** (Core Competencies)

Course Description:

This course is designed to enhance the knowledge, skills and attitudes of an individual in the field of driving articulated vehicles classified under LTO restriction codes 6 up to 8 in accordance with industry standards. It covers core competencies such as: perform minor maintenance and servicing; perform pre-and post operation procedures for such vehicles; drive these vehicles; obey and observe traffic rules and implement and coordinate accident and emergency situations.

This course is also designed to equip the individual the desirable basic and common attitudes and skills of the Driving (Articulated Vehicle) NC III

To obtain this, all units prescribed for this qualification must be achieved.

### BASIC COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Lead workplace communication	1.1 Communicate information about workplace processes. 1.2 Lead workplace discussions. 1.3 Identify and communicate issues arising in the workplace	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Role Play</li> <li>• Brainstorming</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Interviews</li> </ul>
2. Lead small teams	2.1 Provide team leadership. 2.2 Assign responsibilities among members. 2.3 Set performance expectation for team members. 2.4 Supervise team performance	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Demonstration</li> <li>• Self-paced (modular)</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration</li> <li>• Case studies</li> </ul>
3. Develop and practice negotiation skills	3.1 Identify relevant information in planning negotiations 3.2 Participate in negotiations 3.3 Document areas for agreement	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Simulation/role playing</li> <li>• Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Practical/ performance test</li> </ul>

<b>Unit of Competency</b>	<b>Learning Outcomes</b>	<b>Methodology</b>	<b>Assessment Approach</b>
4. Solve workplace problem related to work activities	4.1 Explain the analytical techniques. 4.2 Identify the problem. 4.3 Determine the possible cause/s of the problem.	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Simulation/role playing</li> <li>• Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Practical/ performance test</li> </ul>
5. Use mathematical concepts and techniques	5.1 Identify mathematical tools and techniques to solve problem 5.2 Apply mathematical procedures/solution 5.3 Analyze results	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Simulation/role playing</li> <li>• Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Practical/ performance test</li> </ul>
6. Use relevant technologies	6.1 Identify appropriate technology 6.2 Apply relevant technology 6.3 Maintain/enhance relevant technology	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Simulation/role playing</li> <li>• Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Practical/ performance test</li> </ul>

### **COMMON COMPETENCIES**

<b>Unit of Competency</b>	<b>Learning Outcomes</b>	<b>Methodology</b>	<b>Assessment Approach</b>
1. Apply appropriate sealant/ adhesive	1.1 Identify appropriate sealant/ adhesive 1.2 Prepare surface for sealant / adhesive application 1.3 Store unused and dispose used sealant/adhesive	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>
2. Move and position vehicle	2.1 Prepare vehicle for driving 2.2 Move and position vehicle 2.3 Check the vehicle	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>
3. Perform mensuration and calculation	3.1 Select measuring instrument and carry out measurement and calculations 3.2 Maintain measuring instruments	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>

<b>Unit of Competency</b>	<b>Learning Outcomes</b>	<b>Methodology</b>	<b>Assessment Approach</b>
4. Read, interpret and apply specifications and manual	4.1 Identify/access manuals and interpret data and specification 4.2 Apply information accessed in manual 4.3 Store manual	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>
5. Use and apply lubricant/ coolant	5.1 Identify type of lubricant/ coolant 5.2 Use and apply lubricant	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>
6. Perform shop maintenance	6.1 Inspect/clean tools and work area 6.2 Store/arrange tools and shop equipment 6.3 Dispose waste/used lubricants 6.4 Report damaged tools/equipment	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>
7. Interpret/Draw technical drawing	7.1 Interpret technical drawing 7.2 Select correct technical drawing 7.3 Apply freehand sketching	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>
8. Prepare job estimates	8.1 Identify nature/scope of work 8.2 Prepare and present estimates	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Dual training</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> <li>• Project method</li> <li>• Interview</li> </ul>

## CORE COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Perform minor maintenance and servicing on vehicles classified under LTO restriction Codes 6 up to 8.	1.1 Perform routine check-up 1.2 Clean vehicle head 1.3 Report any minor troubles found and observe abnormalities	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> </ul>
2. Perform Pre-and Post Operation Procedures on vehicles classified under LTO restriction Codes 6 up to 8.	2.1 Perform “BLOWAF” check 2.2 Check pilot pin, pin lock, hose engagement (electrical, hydraulic, air pressure) 2.3 Check operating condition of panel control (instrument gauges, indicators and controls) of the vehicle 2.4 Check operating condition of air brake and steering control 2.5 Engage/set safety locks when parked 2.6 Reconduct walk around inspection prior to turning off the engine	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> </ul>
3. Obey and Observe Traffic Rules and Regulations	3.1 Identify traffic rules and regulations/ordinances implemented in different municipalities/cities 3.2 Wear appropriate driver outfit/ attire 3.3 Respond to / handle complaints 3.4 Obey and observe traffic rules and regulations	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> </ul>
4. Observe road health and safety practices	4.1 Identify and evaluate hazards and risks 4.2 Control hazards and risks 4.3 Maintain fitness for driving	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> </ul>
5. Implement and Coordinate Accident-Emergency Procedures	5.1 Identify different types of emergency situations 5.2 Respond to accidents/ emergencies encountered 5.2 Report accidents/emergency situation to proper authority 5.2 Apply first aid 5.2 Provide needs of injured victim based on emergency procedures	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> </ul>
6. Drive Articulated Vehicle	6.1 Identify different parts of articulated vehicle 6.2 Drive articulated vehicle 6.3 Follow standard procedures in driving articulated vehicle 6.4 Manage different types of driving hazards 6.5 Monitor irregular performance of the vehicle 6.6 Perform minor vehicle maintenance 6.7 Safeguard pertinent documents for cargoes to be transported	<ul style="list-style-type: none"> <li>• Lecture/ Demonstration</li> <li>• Self-paced (modular)</li> <li>• Distance learning</li> </ul>	<ul style="list-style-type: none"> <li>• Written test</li> <li>• Oral questioning</li> <li>• Direct observation</li> </ul>

## 3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off the-job components;
- Training program allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Training programs are registered with UTPRAS.

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.
- Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

### 3.3 TRAINEE ENTRY REQUIREMENTS

This section specifies the qualifications of trainees and educational experience. Other requirements like health and physical requirements are also stated. Passing entry written examinations may also be indicated if necessary.

- With good moral character;
- Able to communicate both orally and in writing
- Physically fit and mentally healthy as certified by a Public Health Officer
- Holder of LTO license with restriction code 3.

### 3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS

Recommended list of tools, equipment and materials for the training of 25 trainees for Driving (Articulated Vehicle) NC III

TOOLS		EQUIPMENT		MATERIALS	
Qty.	Description	Qty.	Description	Qty.	Description
4 set	Mop and basket	2 units	Articulated vehicle (w/ trailer)	5 boxes	Soap
4 pcs,	Pail			5 liters	Shampoo
4 pcs,	Broom			10 liters	Gear oil
4 pcs,	Hose	2 units	Vacuum cleaner	20 pcs.	Air freshener
25 pairs	Gloves	2 units	Steam cleaner	10 pcs	Polish
25 pairs	Apron	2 units	Air compressor	10 liters	Distilled water
25 pairs	Goggles	2 units	Pressure washer	4 pcs.	Fan belt
25 pairs	Plastic boots			10 pcs.	Fuse
4 set	Screwdriver (flat & Philips)			4 rolls	Electrical tape
4 set	Hex key (Allen key)			2 liters	Brake fluid
	Mechanical pliers			4 pcs.	A/C belt
	Long-nose pliers			4 pcs.	P/S belt
4 set	Combination wrench			10 liters	Coolant
4 pcs.	Early warning device (EWD)			10 liters	Additives
4 pcs.	Emergency lighting device/ trouble light			4 pcs.	Relay
4 pcs.	Jack (heavy duty)			20 mts.	Wire or nylon rope
2 pcs.	Tire wrench			2 pcs.	G.I. pipe 1" x 24"
4 pcs.	Tire gauge				
4 pcs.	Creeper				Training Materials
4 pcs.	Tire choke				• Reference books
					• Manuals
					• Brochure
					• Catalogs
					• CDs/Video tapes
					• Learning modules

### 3.5 TRAINING FACILITIES DRIVING (Articulated Vehicle) NC III

Based on a class size of 25 students/trainees

SPACE REQUIREMENT	AREA IN SQUARE METERS	TOTAL AREA IN SQUARE METERS
Building (Permanent)	54.60	54.60
Lecture Room	30.00	30.00
Circulation Area	12.60	12.60
Tool Room	12.00	12.00
Driving lane	1,000.00	1,000.00
	Total	<b>1,054.60</b>

### 3.6 TRAINERS' QUALIFICATION FOR AUTOMOTIVE/LAND TRANSPORT SECTOR

**DRIVER (Articulated Vehicle) NC III (CLASSIFIED UNDER THE LTO RESTRICTION CODE 8)**

- Must be a holder of a Driving (Articulated Vehicle) NC III certificate
- Must be a holder of a Trainer Qualification Level I (TQ I) certificate
- Must be computer literate
- Must be able to communicate, both orally and in writing
- Must be physically and mentally fit
- Must have a minimum of one-year industry experience in driving articulated vehicles
- Must possess a current professional driver's license (restriction code 8) issued by the Land Transportation Office.

### 3.7 INSTITUTIONAL ASSESSMENT

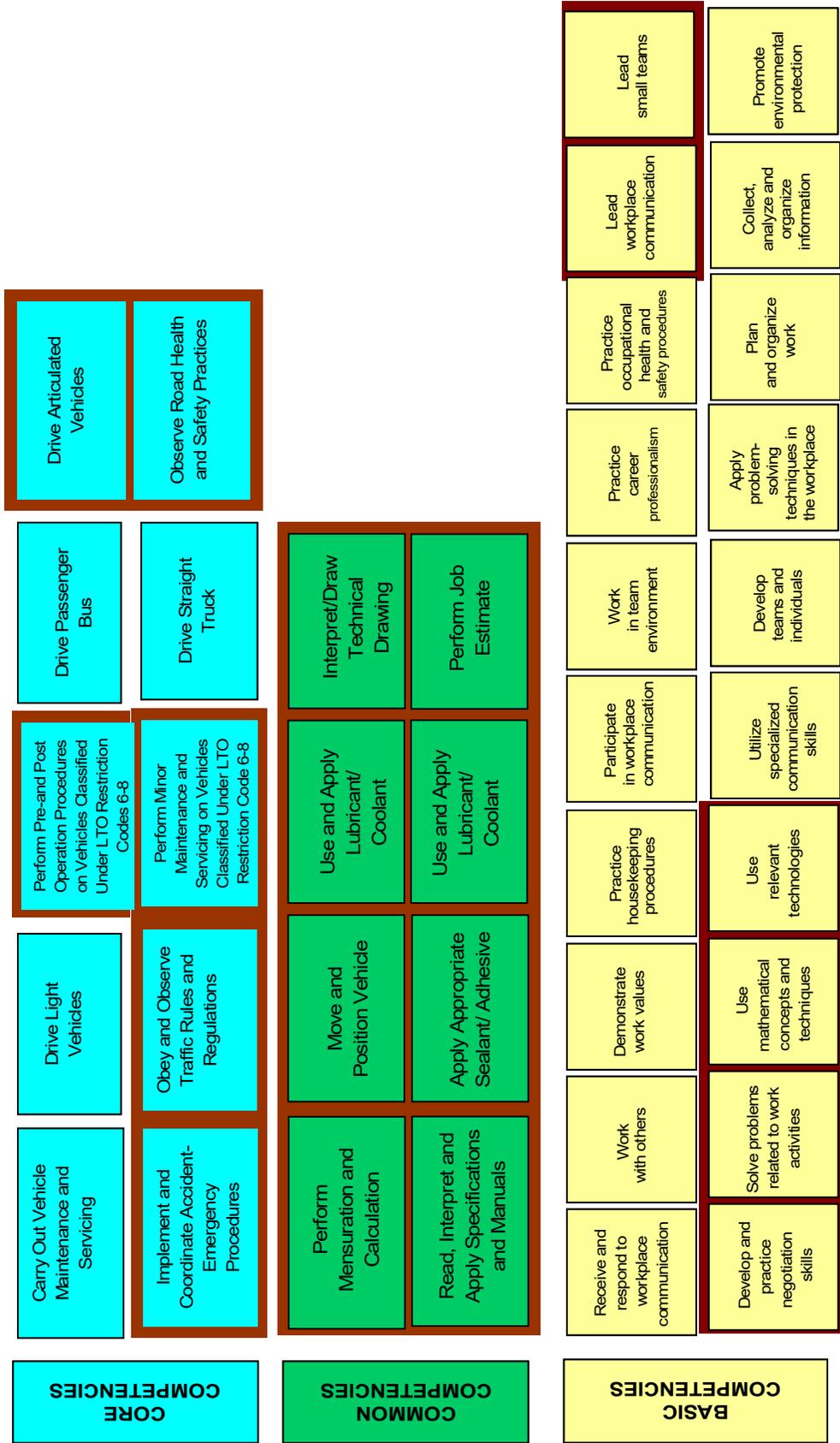
Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

## SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1 To attain the National Qualification of Driving (Articulated Vehicle) NC III, the candidate must demonstrate competence through project-type assessment covering all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2 Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.3 The following are qualified to apply for assessment and certification:
  - 4.3.1 Graduates of formal, non-formal and informal including enterprise-based training programs.
  - 4.3.2 Experienced workers (wage employed or self-employed)
- 4.4 The guidelines on assessment and certification are discussed in detail in the *Procedures Manual on Assessment and Certification* and *Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS)*.

# COMPETENCY MAP DRIVING NC III

Legend:  
DRIVING NC III  
(Articulated Vehicle)



## DEFINITION OF TERMS

1. **Absolute speed limit** - The 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. **Articulated vehicle** - Any motor vehicle with a trailer having no front axle and so attached that part of the trailer rests upon the motor vehicle and a substantial part of the weight of the trailer and of its load is borne by the motor vehicle.
4. **Basic speed limit** - Any speed below the absolute limit that is safe for existing road, weather or traffic conditions.
5. **Collision** - Any crash between motor vehicles or between a motor vehicle and another object.
6. **Driving license** - A 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.
7. **Defensive driving** - Being prepared to handle through any hazardous situation caused by other users of the road.
8. **Directional signals** - Lights on motor vehicle or hand signals used to indicate left and right turns and stops.
9. **Driver** - Person with appropriate license to drive or operate motor vehicle and transport passengers and loads over specified routes or destination.
10. **Professional driver** - A person with appropriate driving license restriction code who is hired or paid for driving or operating a motor vehicle, whether for private use or for hire to the public.
11. **Fare** - Refers to the price charged to transport a passenger
12. **Franchised route** - Refers to the 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.
13. **Gross weight** - The measured weight of a motor vehicle plus the maximum allowable carrying capacity in merchandise, freight and/or passengers, as determined by the Commission of Land Transportation
14. **Highways** - Every public thoroughfare, public boulevard, driveway, avenue, park, alley and callejon, but does not include roadway upon grounds owned by private persons, colleges, universities, or other similar institutions.

- 15. **Motor vehicle** - Any vehicle propelled by any power other than muscular power using the public highways, but excepting road rollers, trolley cars, street sweepers, sprinklers, lawn mowers, bulldozers, graders, fork lifts, amphibian trucks and cranes if not used on public highways and vehicles run only on rails or tracks and tractors, trailers and traction engines of all kinds used exclusively for agricultural purposes.
- 16. **Passenger bus** - A public utility vehicle driven on highways that carry/transport passengers (usually from 30 above) and its cargoes.
- 17. **Periodic Maintenance Service** - The regular servicing prescribed by manufacturer to maintain the vehicle's top performance.
- 18. **Regulatory signs** - Traffic signs that tell what a driver must or must not do under penalty of the law.
- 19. **Restriction Codes 1 and 2** - Driving license restriction set by LTO for driving/operating of the following classification of motor vehicles:
- 20. **Restriction Codes 1 and 2** - Motorcycle, motorized tricycles and vehicles up to 4,500 kgs.GVW
- 21. **Restriction Code 3** - Vehicles above 4,500 kgs GVW
- 22. **Restriction Code 4** - Vehicles Automatic Clutch up to 4,500 kgs GVW
- 23. **Restriction Code 5** - Vehicles Automatic Clutch above to 4,500 kgs GVW
- 24. **Restriction Code 6** - Articulated Vehicle 1,600kgs GVW and below
- 25. **Restriction Code 7** - Articulated Vehicle 1,601 up to 4,500 kgs GVW
- 26. **Restriction Code 8** - Articulated vehicle with 4,501 kilograms and above gross vehicle weight
- 27. **Road Related Accident and Emergency** - Refers to unforeseen and unanticipated road happenings usually resulted from by 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.
- 28. **Roadway markings** - Markings on a pavement separating lanes of travel or indicating what a driver may do.
- 29. **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.
- 30. **Straight Truck** - Any vehicle equipped with 6 up to 12 wheels with no pivotal pin.
- 31. **Traffic** - The flow of all motor vehicles and pedestrians along the street and the highway
- 32. **Traffic signal lights** - Traffic controls which usually located at intersections to regulate traffic flow
- 33. **Warning signs** - Traffic signs that alert drivers to potential hazards ahead

# **ACKNOWLEDGEMENTS**

The Technical Education and Skills Development Authority (TESDA) wishes to extend thanks and appreciation to the many representatives of business, industry, academe and government agencies who rendered their time and expertise to the development and validation of these Training Regulations.

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24 January 2011

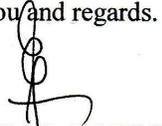
**MS. IRENE M. ISAAC**  
Executive Director  
Qualifications and Standards Office  
TESDA, Taguig City

Dear Director Isaac:

This is to signify that we have no objection to your proposal to separate **Training Regulations (TR) for Driving (Passenger Bus/Straight Truck) NCIII** and **Training Regulations for Driving (Articulated Vehicles) NC III**.

We endorse the promulgation of these two (2) Training Regulations with the understanding that this will not be in conflict with the present drivers' licensing program of the **Land Transportation Office (LTO)**.

Thank you and regards.

  
**VIRGINIA P. TORRES**  
Assistant Secretary 

Cc: Office of the Secretary  
DOTC

