

**MODULE MEC3090: COMPUTER SYSTEMS****Level:** Advanced**Theme:** Guidance and Control Systems**Prerequisite:** MEC2070 Emission Controls**Module Description:** Students provide an overview of the applications of computer management systems used in modern vehicles.**Module Parameters:** Access to computer management system diagnostic equipment and related resources.**Supporting Module:** MEC2090 Electrical Components**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>demonstrate established safety and care procedures related to computer management systems</li> <li>identify the principles that apply to all computer management systems</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>observed performance related to:               <ul style="list-style-type: none"> <li>demonstrating compliance with safety and care of computer systems</li> <li>care and safety in the use of tools, equipment and materials</li> <li>antistatic precautions associated with the handling of a central processing unit (CPU).</li> </ul> </li> </ul> <p><i>Assessment Tool</i> <i>Assessment Checklist: Health and Safety, MECH&amp;S</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	15
	<ul style="list-style-type: none"> <li>observed performance related to:               <ul style="list-style-type: none"> <li>identification of common principles shared by all computer management systems</li> <li>comparisons between input devices and output devices used in vehicles and on personal computers (PCs).</li> </ul> </li> </ul> <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Computer Systems, Part 1, MEC3090-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	20

**MODULE MEC3090: COMPUTER SYSTEMS** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• locate the components of selected computer management systems and describe their function</li> <li>• demonstrate how computer management systems operate</li> <li>• perform diagnostic analyses of selected computer management systems and make required repairs to or replacement of malfunctioning parts</li> <li>• demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• observed performance related to:               <ul style="list-style-type: none"> <li>– location of the components of computer management systems</li> <li>– descriptions and location of components and their relationship to the total systems.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Task Assessment Checklist: Computer Systems, Part 2, MEC3090–1</i></p> <p><i>Standard</i>  <i>Performance rating of 3 on each criteria</i></p>	15
	<ul style="list-style-type: none"> <li>• measured performance related to:               <ul style="list-style-type: none"> <li>– demonstrating how computer management systems obtain information, process information and make system adjustments</li> <li>– changing input values and predicting output values on a computer system or schematic.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Task Assessment Checklist: Computer Systems, Part 3, MEC3090–1</i></p> <p><i>Standard</i>  <i>Performance rating of 3 on each criteria</i></p>	
	<ul style="list-style-type: none"> <li>• measured performance related to:               <ul style="list-style-type: none"> <li>– correct diagnosis and analysis of computer management systems</li> <li>– procedures for repair or replacement of parts</li> <li>– accuracy and skill in performing task.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Task Assessment Checklist: Computer Systems, Part 4, MEC3090–1</i></p> <p><i>Standard</i>  <i>Performance rating of 3 on each criteria</i></p>	30
	<ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	Integrated throughout

**MODULE MEC3090: COMPUTER SYSTEMS** (continued)

Concept	Specific Learner Expectations	Notes
Health/Safety Hazards	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate knowledge of and follow practices that promote safety for people and the environment.</li> </ul>	Be aware of procedures that can damage CPUs.
Identification/Function	<ul style="list-style-type: none"> <li>• identify the different computer control systems that are now available on vehicles</li> <li>• explain the functions these computer control systems perform</li> <li>• state the ways in which these computer control systems replaced mechanical systems</li> <li>• demonstrate how selected computer control systems work compared to earlier mechanical systems</li> <li>• identify the principles and functions of computer control systems</li> <li>• locate and identify the parts of selected computer management systems</li> <li>• describe the function of the parts of a selected computer management system</li> <li>• forecast types of computer management systems that may be used on future vehicles.</li> </ul>	
Inspect/Service	<ul style="list-style-type: none"> <li>• perform diagnostic analysis of selected computer management systems</li> <li>• replace parts or make necessary repairs to correct malfunctioning computer management systems.</li> </ul>	Note that faulty use of diagnostics equipment can damage the CPU.
Careers	<ul style="list-style-type: none"> <li>• identify further education, working conditions and career opportunities.</li> </ul>	