

**COURSE ELT1090: ANALOG COMMUNICATION 1****Level:** Introductory**Theme:** Communication Systems**Prerequisite:** ELT1010 Electro-assembly 1**Description:** Students install and demonstrate the fundamentals of various consumer audio integrated systems.**Parameters:** Consumer audio or automobile systems, multimeters and related resources.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>distinguish the difference between terms and specifications used in analog audio systems</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>the ability to distinguish the difference between terms and specifications such as:               <ul style="list-style-type: none"> <li>wattage</li> <li>peak value</li> <li>sine waves</li> <li>distortion</li> <li>impedance matching.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>ELT1090-1: Presentations/Reports: Analog Audio</i></p> <p><i>Standard</i>  <i>Performance rating of 1 for each applicable task</i></p>	15
<ul style="list-style-type: none"> <li>install a functional audio system according to a given set of specifications</li> </ul>	<ul style="list-style-type: none"> <li>observance of performance in installing an audio system.</li> </ul> <p><i>Assessment Tool</i>  <i>ELTLAB-1: Laboratory Practice, Parts 3 and 4</i></p> <p><i>Standard</i>  <i>Performance rating of 1 for each applicable task</i></p>	50

**COURSE ELT1090: ANALOG COMMUNICATION 1 (continued)**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• service and maintain a consumer audio system</li>   <li>• demonstrate established laboratory procedures and safe work practices</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>– identifying problems</li> <li>– cleaning and adjusting components</li> <li>– correcting faults.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>ELTLAB-1: Laboratory Practice, Part 5</i></p> <p><i>Standard</i>  <i>Performance rating of 1 for each applicable task</i></p> <ul style="list-style-type: none"> <li>• observed performance in following:               <ul style="list-style-type: none"> <li>– established laboratory procedures</li> <li>– procedures regarding high current and heat</li> <li>– correct wiring procedures and use of current protection.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>ELTPSP: Assessment Checklist: Laboratory Procedures and Safety Practices</i></p> <p><i>Standard</i>  <i>Performance rating of 1 for each applicable task</i></p> <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>	<p style="text-align: center;">30</p> <p style="text-align: center;">5</p> <p style="text-align: center;">Integrated throughout</p>

Concept	Specific Outcomes	Notes
<p>Safety/Resource Management</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify causes of high current and high heat in systems</li> <li>• follow correct wiring procedures.</li> </ul>	<p>Fusing, load-carrying capacity of cables, temperatures, heat dissipation.</p>

**COURSE ELT1090: ANALOG COMMUNICATION 1 (continued)**

Concept	Specific Outcomes	Notes
Fundamentals	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• read and interpret an audio system flow connection chart.</li> <li>• define audio terms and specifications such as wattage, peak value, sine waves, distortion, impedance matching.</li> </ul>	
System Identification	<ul style="list-style-type: none"> <li>• identify various subsystems of an audio system, including:               <ul style="list-style-type: none"> <li>– amplifier</li> <li>– preamp</li> <li>– equalizer</li> <li>– speakers</li> <li>– compact disc player</li> <li>– tape</li> <li>– crossover.</li> </ul> </li> <li>• identify major components of an amplifier through the use of block diagram, identifying power supply, preamp, amplifier.</li> </ul>	
System Application	<ul style="list-style-type: none"> <li>• install a complete audio system.</li> </ul>	Expand to power speakers, equalizers, distribution system.
Fabricating/Testing	<ul style="list-style-type: none"> <li>• construct a simple audio device, such as:               <ul style="list-style-type: none"> <li>– amplifier</li> <li>– crossover network</li> <li>– fader</li> <li>– equalizer</li> <li>– distribution network</li> <li>– mixers</li> <li>– light organ</li> </ul> </li> <li>• explain and demonstrate how to test an audio device for intended function.</li> </ul>	Consider the possibility of linking this course with ELT2010 Electro-assembly 2.
Problem Solving	<ul style="list-style-type: none"> <li>• lay out and connect the wiring for an audio system.</li> </ul>	Solderless versus solder connections, terminal blocks, fusing, grounding, filtering.

**COURSE ELT1090: ANALOG COMMUNICATION 1 (continued)**

Concept	Specific Outcomes	Notes
Repair/Service and Maintenance	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• explain and demonstrate how to troubleshoot an audio system.</li><li>• maintain an audio system by identifying problems and correcting.</li></ul>	<p>Clean heads, antenna tuning, poor connections, cleaning volume controls.</p> <p>Check if cost effective.</p>