

**COURSE ELT3020: ELECTRONIC SERVICING****Level:** Advanced**Theme:** Fabrication and Service Principles**Prerequisite:** ELT2020 Electrical Servicing**Description:** Students develop and apply basic processes and skills to service and repair consumer-based electronic products.**Parameters:** DMM, Isolation transformer, oscilloscope, soldering iron, chemical cleaners, chamois cleaning sticks, foam swabs, transistor tester, capacitance meter and related resources. Optional Equipment: colour pattern generator, CRT tester/restorer, high voltage test probe, alignment tools.**Supporting Courses:** ELT2090 Analog Communication 2  
ELT2100 Radio Communication**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>use a block diagram to show the function and the stages of operation of an electronic device</li> <li>identify system faults, and propose solutions to service and repair various digital and analog consumer products</li> <li>use standard, safe practices to service/repair an electronic component or device</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>developing a block diagram and describing how each section in the block diagram operates for a given consumer electronic product.</li> </ul> <p><i>Assessment Tool</i> <i>ELT3020-1: Presentations/Reports: Electronic Service and Repair</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	30
	<ul style="list-style-type: none"> <li>identifying problems, and proposing solutions to service various consumer electronic products.</li> </ul> <p><i>Assessment Tool</i> <i>ELTCSR: Customer Service, Part 1</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	35
	<ul style="list-style-type: none"> <li>observation in using the solution to repair/service consumer electronic products.</li> </ul> <p><i>Assessment Tool</i> <i>ELTCSR: Customer Service, Part 2</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	35

**COURSE ELT3020: ELECTRONIC SERVICING (continued)**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• create a profile of a trade or occupation within the field of electronic servicing</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>• completing a career profile within the field of electronic equipment servicing.</li> </ul> <p><i>Assessment Tool</i>  <i>ELTCPC: Assessment Guide: Career Profiles</i></p> <p><i>Standard</i>  <i>Completing all sections of career profile chart</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;">5</p> <p>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>• demonstrate a safe attitude</li> <li>• use proper grounding techniques when testing consumer electronic devices</li> <li>• use proper handling techniques when working on cathode-ray tubes and high voltages.</li> </ul>	<p>Personal protection.</p> <p>Always ground out high voltage capacitors.</p> <p>Implosion hazard.</p>
<p>System Identification</p>	<ul style="list-style-type: none"> <li>• identify stages of operation of various consumer systems</li> <li>• interpret a flow diagram and schematics of various consumer systems.</li> </ul>	<p>TV, VCR, camcorder, receiver, computer, microwave oven and other consumer devices.</p>
<p>Problem Solving</p>	<ul style="list-style-type: none"> <li>• identify problems associated with various consumer products and propose a solution to affect the repair.</li> </ul>	<p>VCR head cleaning and alignment.</p> <p>TV alignment and colour adjustment.</p>
<p>Applied Mathematics</p>	<ul style="list-style-type: none"> <li>• use an oscilloscope to determine period in seconds and frequency in Hertz (Hz)</li> <li>• identify measurements in engineering notation.</li> </ul>	

**COURSE ELT3020: ELECTRONIC SERVICING (continued)**

Concept	Specific Outcomes	Notes
Testing	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify and test components in faulty section(s).</li> </ul>	Transistor, diodes, capacitors, VCR drive systems, PC boards.
Repair/Service/Maintenance	<ul style="list-style-type: none"> <li>• demonstrate how to:               <ul style="list-style-type: none"> <li>– service faulty section</li> <li>– clean user controls</li> <li>– adjust colour balance, vertical height/linearity of a TV or monitor</li> <li>– clean a VCR head and tape running system</li> <li>– adjust VCR tape tracking system</li> <li>– clean belts and lubricate a VCR</li> <li>– repair or replace PC boards.</li> </ul> </li> </ul>	<p>Tuner, volume control, etc.</p> <p>Games systems or other consumer devices.</p> <p>Upgrading personal computers.</p>
Careers	<ul style="list-style-type: none"> <li>• research employment opportunities in electronic service and repair.</li> </ul>	Consumer electronic.

