

COURSE ELT1010: ELECTRO-ASSEMBLY 1**Level:** Introductory**Theme:** Fabrication and Service Principles**Prerequisite:** None**Description:** Students apply basic fabricating and servicing techniques to construct and test electronic and electromagnetic devices and cables.**Parameters:** Basic hand tools, soldering equipment, voltmeter, ohmmeter/test light 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"> apply the appropriate fabrication techniques, including proper soldering and component assembly procedures, to construct and test a simple electronic circuit 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> construction of a simple electronic project and observation of: <ul style="list-style-type: none"> plan of action complexity of system/circuit function quality of assembly testing procedures. <p><i>Assessment Tool</i> <i>ELT1010: Assessment Checklist: Laboratory Practice, Part 1</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p>	45
	<ul style="list-style-type: none"> apply the appropriate fabrication techniques to construct and test an electromagnetic device <ul style="list-style-type: none"> construction of a simple magnetic device and observation of: <ul style="list-style-type: none"> circuit function complexity of system system/circuit testing. <p><i>Assessment Tool</i> <i>ELT1010: Assessment Checklist: Laboratory Practice, Part 2</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p>	30

COURSE ELT1010: ELECTRO-ASSEMBLY 1 (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • identify and assemble common electrical/ electronic cables and connectors used in power, audio and video connections • demonstrate established laboratory procedures and safe work practices • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • construction of the following: <ul style="list-style-type: none"> – one soldered connection (RCA patch cord) – one solderless connection (power extension cord) – one communication cable connection (telephone extension cord) – one current cable connection (crimp connected cable). <p><i>Assessment Tool</i> <i>ELT1010: Assessment Checklist: Laboratory Practice, Part 3</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p> <ul style="list-style-type: none"> • observed performance in: <ul style="list-style-type: none"> – following established laboratory procedures – safe soldering practices – avoiding electrical hazards. <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"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>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"> • demonstrate safe home/lab procedures with respect to electrical hazards and use of solder and flux • identify and explain the importance of electrical protection devices. 	<p>Fuses, breakers.</p>

COURSE ELT1010: ELECTRO-ASSEMBLY 1 (continued)

Concept	Specific Outcomes	Notes
Fundamentals	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • construct and analyze a simple control circuit • measure voltage and continuity to appraise condition of circuit using appropriate instrumentation; e.g., simple alarm, simple automobile circuit, multimeter (digital and analog) • define AC/DC voltages and polarity • use proper solder and soldering techniques to gain an understanding of their value • install specialty connectors and cables to acquire knowledge and skills • demonstrate an understanding of specialty cables that link systems with special functions including fibre optics, coaxial, telephone • identify components. 	<p>Techniques video.</p> <p>Power cable, communication cable (solder and solderless).</p> <p>Resistor and capacitor identification.</p>
Designing and Prototyping	<ul style="list-style-type: none"> • analyze several magnetic devices to formulate an understanding of their function; e.g., speakers, electromagnetic crane, tape heads, moving magnetic pick-ups, relays, magnetic strip, levitation trains, magnetic device in hard drive • use various breadboarding techniques to be able to understand methods used; e.g., nail and board sector and spring clip, wire wrap, point to point and solderless breadboard. 	

