

COURSE ELT1100: ELECTRONIC COMMUNICATION**Level:** Introductory**Theme:** Communication Systems**Prerequisite:** ELT1010 Electro-assembly 1**Description:** Students demonstrate the fundamentals of video systems, and describe their uses.**Parameters:** Special video equipment, cables, connectors and 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"> describe and compare the operating principles of coaxial cable television (CCTV) and cable television (CATV) video systems describe and compare various video formats assemble and install connectors associated with video cable network and video electronic systems 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> explanation of the operating principles of the following video systems: <ul style="list-style-type: none"> closed circuit television (CCTV) cable television (CATV). <p><i>Assessment Tool</i> <i>ELT1100–1: Presentations/Reports: Video Systems</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p>	25
	<ul style="list-style-type: none"> differentiate between: <ul style="list-style-type: none"> VHS Beta 8 mm video formats. <p><i>Assessment Tool</i> <i>ELT1100–1: Presentations/Reports: Video Systems</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p>	20
	<ul style="list-style-type: none"> observation of performance when connecting: <ul style="list-style-type: none"> camera to recorder recorder to television camera/recorder to cable network computer to cable network camera or video cassette recorder to computer. <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>	30

COURSE ELT1100: ELECTRONIC COMMUNICATION (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • explain the operation of an analog-modulated video system • 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"> • explanation of the operating principles of a given analog-modulated video system. <p><i>Assessment Tool</i> <i>ELT1100-1: Presentations/Reports: Video Systems</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 following: <ul style="list-style-type: none"> – established laboratory procedures – proper procedures for handling of CRTs – correct procedures when working with static and magnetic sensitive subsystems. <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"> • follow laboratory safety procedures, in particular when handling cathode-ray tube (CRT), laser fibre optics, cable connections, vibration-sensitive mounting and static and magnetic sensitive subsystems. 	<p>Use of static straps.</p>

COURSE ELT1100: ELECTRONIC COMMUNICATION (continued)

Concept	Specific Outcomes	Notes
Fundamentals	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • define terms used in video network systems: <ul style="list-style-type: none"> – video signal – frequency modulation (FM) – video home system (VHS) – Beta – 8 mm – video graphics array (VGA) – closed circuit television (CCTV) – cable television (CATV) – digital modulation – bandwidth – channels – digital pulse modulation – impedance matching. 	<p>Explain the difference between RF connectors such as “F,” BNC, UHF, TNC.</p>
System Identification	<ul style="list-style-type: none"> • identify CCTV and CATV video systems • explain the block diagram of the following photo-visual systems: slide, film (8, 16, 32, 70 mm) • differentiate between VHS, Beta, 8 mm, CD video formats. 	
System Application	<ul style="list-style-type: none"> • connect a camera to a recorder • connect a recorder to a TV • connect a camera/recorder to a cable network system • connect a computer to a cable network • connect a video system to minimize video loss (impedance matching) • explain operation of distribution amplifiers. • connect cables according to industry standards. 	
Problem Solving	<ul style="list-style-type: none"> • identify the impedance of different coaxial cables • examine the impedance matching characteristics of different types of cables. 	
Ethics	<ul style="list-style-type: none"> • identify ethical points of view when taking signals from video systems. 	

