



COURSE OUTLINE: ELR622 - INSTRUMENTATION I

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Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	ELR622: INSTRUMENTATION - LEVEL 1
Program Number: Name	6520: CONST & MTCE ELE BAS
Department:	ELEC. APPRENTICES
Semesters/Terms:	18F
Course Description:	This course is an introduction to instrumentation symbols and terminology. Temperature and pressure measurement will be studied in detail.
Total Credits:	3
Hours/Week:	3
Total Hours:	24
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Essential Employability Skills (EES) addressed in this course:	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 3 Execute mathematical operations accurately.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>
Course Evaluation:	Passing Grade: 50%, D
Other Course Evaluation & Assessment Requirements:	<p>Grade Definition Grade Point Equivalent A+ 90 - 100% 4.00 A 80 - 89% B 70 - 79% 3.00 C 60 - 69% 2.00 D 50 - 59% 1.00 F (Fail) 49% and below 0.00</p>



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CR (Credit) Credit for diploma requirements has been awarded.
 S Satisfactory achievement in field /clinical placement or non-graded subject area.
 U Unsatisfactory achievement in field/clinical placement or non-graded subject area.
 X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
 NR Grade not reported to Registrar's office.
 W Student has withdrawn from the course without academic penalty.

Books and Required Resources:

Lab Volt

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Describe Instrumentation and Process Control and understand Related terminology.	<ul style="list-style-type: none"> - Explain what Instrumentation is. - Explain what Process Control is. - Describe the major components of a process control loop. - Draw the block diagram of a process control loop. - Understand instrumentation units, symbols and terminology.(I.S.A.)
Course Outcome 2	Learning Objectives for Course Outcome 2
Understand temperature measurement, devices and applications	<ul style="list-style-type: none"> - Understand the difference between temperature and heat. - Convert from one temperature scale to another. - Describe the physical and operating characteristics of - Filled system thermometers, thermocouples, resistance - Temperature detectors and thermistors. - Calibrate and explain the operation of thermocouple and RTD - transmitters - Describe methods of measuring temperature. - Select, install and calibrate temperature measurement devices
Course Outcome 3	Learning Objectives for Course Outcome 3
Understand pressure measurement, devices and applications	<ul style="list-style-type: none"> - Define the term fluids and fluid mechanics - Derive units of force, energy and pressure in SI and English units - Perform unit conversions and calculations - Describe methods of measuring pressure

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight	Course Outcome Assessed
Assignments and quizzes	10%	
Labs	20%	
Practical Tests	20%	
Written Tests	50%	

Date:

August 28, 2018

Please refer to the course outline addendum on the Learning Management System for further information.

