COURSE OUTLINE: ELR721 - ELECTRONICS LEVEL 2

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Course Code: Title	ELR721: ELECTRONICS - LEVEL 2
Program Number: Name	6521: CONST & MTCE ELE INT
Department:	ELEC. APPRENTICES
Semesters/Terms:	20F, 21W
Course Description:	The student will learn to describe and perform calculations for rectifier based power supplies, thyristors and field effect transistors, as well as operational amplifiers and their applications. The student will complete appropriate labs to support and reinforce the theoretical component.
Total Credits:	4
Hours/Week:	4
Total Hours:	3
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:	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	To achieve an overall passing grade, the student must pass both the Theory and Lab portions of the course. 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 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 W Student has withdrawn from the course without academic penalty.

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.

Books and Required Resources:	Same book as ELR621

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. The student will demonstrate knowledge of rectifier circuits and power supplies, Zener diodes, Field Effect Transistors, op-amps, and thyristors including the SCR, DIAC and TRIAC	1.1 Demonstrate correct use of an oscilloscope to test circuits. 1.2 Explain the importance of isolation as applied to test equipment. 1.3 Describe and demonstrate full-wave rectification. 1.4 Connect capacitors and inductors to filter a power supply output. 1.5 Explain and demonstrate the use of a Zener diode as a regulator. 1.6 Describe and demonstrate the operation of a SCR. 1.7 Describe and demonstrate the operation of a DIAC. 1.8 Describe and demonstrate the operation of TRIAC. 1.9 Describe and demonstrate how a DIAC and RC network can be used to phase shift a TRIAC 1.10 Describe the operation and applications of a Pulse Transformer and the theory of pulse triggering thyristors 1.11 Explain the operation of an Operational Amplifier (Op. Amp) 1.12 Perform appropriate calculations related to each circuit

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Lab reports	50%
Theory tests	50%

Date:	October 6, 2020
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.

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