



COURSE OUTLINE: ELR721 - ELECTRONICS LEVEL 2

Prepared: shager

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	ELR721: ELECTRONICS - LEVEL 2					
Program Number: Name	6521: CONST & MTCE ELE INT					
Department:	ELEC. APPRENTICES					
Semesters/Terms:	18F, 19F, 20F					
Course Description:	This course introduces the student to rectifier based power supplies, thyristors and field effect transistors. Operational amplifiers and their applications are also covered. Theory is supported by appropriate labs.					
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.					
Course Evaluation:	Passing Grade: 50%, D					
Other Course Evaluation & Assessment Requirements:	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 W Student has withdrawn from the course without academic penalty.					
Books and Required Resources:	Same book as ELR621					
Course Outcomes and Learning Objectives:	<table><tr><th>Course Outcome 1</th><th>Learning Objectives for Course Outcome 1</th></tr><tr><td>1. A course in the applications of diodes in rectifier circuits and power supplies. Other topics include Zener diodes, Field Effect Transistors, op-amps and thyristors including the</td><td>1.1 Use the 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</td></tr></table>		Course Outcome 1	Learning Objectives for Course Outcome 1	1. A course in the applications of diodes in rectifier circuits and power supplies. Other topics include Zener diodes, Field Effect Transistors, op-amps and thyristors including the	1.1 Use the 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
Course Outcome 1	Learning Objectives for Course Outcome 1					
1. A course in the applications of diodes in rectifier circuits and power supplies. Other topics include Zener diodes, Field Effect Transistors, op-amps and thyristors including the	1.1 Use the 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					



SAULT COLLEGE | 443 NORTHERN AVENUE | SAULT STE. MARIE, ON P6B 4J3, CANADA | 705-759-2554

	SCR, DIAC and TRIAC	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)									
Evaluation Process and Grading System:	<table> <tr> <th>Evaluation Type</th><th>Evaluation Weight</th><th>Course Outcome Assessed</th></tr> <tr> <td>Lab reports</td><td>50%</td><td></td></tr> <tr> <td>Theory tests</td><td>50%</td><td></td></tr> </table>		Evaluation Type	Evaluation Weight	Course Outcome Assessed	Lab reports	50%		Theory tests	50%	
Evaluation Type	Evaluation Weight	Course Outcome Assessed									
Lab reports	50%										
Theory tests	50%										
Date:	August 20, 2018										
	Please refer to the course outline addendum on the Learning Management System for further information.										

