



# COURSE OUTLINE

## ELR721

Prepared: shager Approved: c meunier

<b>Course Code: Title</b>	ELR721: ELECTRONICS - LEVEL 2						
<b>Program Number: Name</b>	6521: CONST & MTCE ELE INT						
<b>Department:</b>	ELEC. APPRENTICES						
<b>Semester/Term:</b>	18S						
<b>Course Description:</b>	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.						
<b>Total Credits:</b>	4						
<b>Hours/Week:</b>	4						
<b>Total Hours:</b>	3						
<b>Course Evaluation:</b>	Passing Grade: 50%, D						
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<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> <p>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                      W Student has withdrawn from the course without academic penalty.</p>						
<b>Evaluation Process and Grading System:</b>	<table border="1"> <thead> <tr> <th>Evaluation Type</th> <th>Evaluation Weight</th> </tr> </thead> <tbody> <tr> <td>Lab reports</td> <td>50%</td> </tr> <tr> <td>Theory tests</td> <td>50%</td> </tr> </tbody> </table>	Evaluation Type	Evaluation Weight	Lab reports	50%	Theory tests	50%
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Lab reports	50%						
Theory tests	50%						

**Books and Required Resources:**

Same book as ELR621

**Course Outcomes and Learning Objectives:****Course Outcome 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 SCR, DIAC and TRIAC

**Learning Objectives 1.**

Use the oscilloscope to test circuits.

Explain the importance of isolation as applied to test equipment.

Describe and demonstrate full-wave rectification.

Connect capacitors and inductors to filter a power supply output.

Explain and demonstrate the use of a Zener diode as a regulator.

Describe and demonstrate the operation of a SCR.

Describe and demonstrate the operation of a DIAC.

Describe and demonstrate the operation of TRIAC.

Describe and demonstrate how a DIAC and RC network can be used to phase shift a TRIAC

Describe the operation and applications of a Pulse Transformer and the theory of pulse triggering thyristors

Explain the operation of an Operational Amplifier (Op. Amp)

**Date:**

Monday, April 23, 2018

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