



NAME: _____

BLK: _____

COURSE OUTLINE
ELECTRONICS LEVEL 3 & L3 Robotics

I. COURSE OBJECTIVES

- A. To gain experience and knowledge in the outlined areas of work and study.
- B. To gain some knowledge of systems, and how the functional units connect to each other.
- C. To design or modify a system or sub-system.
- D. To initiate and complete a project or practical job to a reasonable standard.
- E. To read drawings related to electronics.
- F. To develop skills in the use of electronic tools.
- G. To develop skills in the use and application of test equipment.
- H. To gain knowledge of symbols and units of measure.
- I. To gather, organize, and interpret performance data.
- J. To gain knowledge of troubleshooting techniques and procedures.
- K. To develop skills in the use of reference materials and resources.

II. COURSE CONTENT

A.	
i. Introduction and Review	Review Quiz/Safety Quiz
ii. Wheatstone Bridge	Practical Exercise
ii. Internet Research	Choose an area of interest – 2 page report
B.	
i. Motors Intro	Internet research
ii. Build a simple motor	
C.	
i. Investigating Magnetic Fields	
ii. Intro to AC and Linear Elx DAC & ADC	Op amps
D.	
i. Power Supply	Complete
E.	
i. Robotics	- Stepper Control - PIC's - Basic Programming
H. Project Work (Time Permitting)	Student Determined

III. SUPPLIES REQUIRED

- Bring a **binder with paper, pencil and eraser** to class,
- Bring your **parts box** to class,
- Bring a **calculator** to class.
- Bring your **SHSS Planner** to class.



IV. SECURITY, SAFETY & BEHAVIOR

- Any abuse or misuse of equipment will result in consequences,
- No outdoor jackets permitted in the lab,
- No backpacks or large carry bags,
- No food or drink,
- No personal cell phones, cameras or DAPs may be brought into the Elx Lab.
- Only use machinery or equipment that you have observed a **SAFETY** demonstration for and for which you have received an 80% or better mark on the Safety test.
- Items left in the class are at your own risk.
- **ASK FOR PERMISSION TO USE MACHINERY.**
- For all potentially hazardous products **WHIMS** must be read and understood.

V. EVALUATION

The final mark is based on theoretical work, project work, lab work, and participation/accountability.

Note book.....	10%
Participation/Accountability	10%
i) Safety	
ii) Attendance	
iii) Work habits	
Term tests.....	20%
Term project.....	30%
Labs.....	30%
TOTAL.....	100%

VI. NOTEBOOK

Tests and quizzes will be based on the notes you have taken in class. It is essential that you keep your notebook neat and organized. If you miss a day of notes, it is your responsibility to get the notes from another member of the class. All handouts you receive must be hole-punched and inserted correctly into your binder. 10% of your grade for the course will be based on how neat and complete your notebook is.



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VII. PROJECT COST & ADDITIONALS

Every student will be able to meet the course objectives at no cost to the student.

Each student is required to have a prototyping breadboard.

This is available for use during the course but will require a damage deposit of \$10.00 which will be returned at the end of the semester if the breadboard is undamaged. The student may wish to purchase their own breadboard at a cost of \$10.00.

A parts box (fish tackle box) is highly recommended and can be purchased from Canadian Tire ~ \$6.00 - \$10.00 alternately any container that has a lid can be used.

If the student decides to build and take home a project, the cost of all materials will be their responsibility. A cost sheet for these materials will be made available to parents once an appropriate project is decided on.

Parent Signature