NAME:_____

BLK: _____

COURSE OUTLINE
Robotics 9 *12/13*

I. COURSE OBJECTIVES

A. To gain experience in and knowledge in the outlined areas of work and study with **SAFETY** as key component.
B. To gain introductory 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 mechanics, electronics and pneumatics.
F. To develop skills in the use of mechanic and 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 develop basic programming skills using PIC BASIC and introductory "C".
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	Design Basics Sketching
ii. Basic Elx	Practical Exercises-Elx Safety Quiz
iii. Internet / Library Research	What is robotics? (2 page original report)
B.	
i. Motors Intro	Internet / research
C.	
i. Investigating Magnetic Fields	Simple Motor
ii. Build a SumoBot	Build first robot with tether
D.	
i. PIC Basic	Intro to Programming
G.	
i. Robotics	Systems – Drives & Sensors
H. Project Work	Student Determined

III. SUPPLIES REQUIRED

- **binder with paper,**
- **pencil with eraser** ,
- **parts box**,
- **calculator**.
- SHSS **Planner** or pocket sized **logbook**.

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 THE 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.

NAME:_____

BLK: _____

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**.

The motors, gearbox and wheels will cost **$15.00** if the student wishes to keep the project**.**

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