Use this page to submit a proposal for your **Independent Study Project**. You have read the underlying philosophy of the activity (<http://darcy.rsgc.on.ca/ACES/ISPs/Hardware.html>), explored various topics of pursuit and have understood the assessment criteria (<http://darcy.rsgc.on.ca/ACES/ISPs/ISPEvaluation.docx>).

**1. Your Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Project Title:**

**2. Provide a brief description of your project within each of the three domains.**

 **Hardware:**

 **Software:**

 **Design:**

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**3.** **Why did you select this project?**

Please check all boxes corresponding to the concepts and skills you intend to exploit in this project.

|  |  |  |  |
| --- | --- | --- | --- |
| **Hardware Components** | **Software Techniques** | **Power** | **Skills** |
| □ resistors□ capacitors□ potentiometers□ transistors□ diodes□ push buttons□ switches□ LDRs□ thermistor□ temperature sensor□ proximity sensor□ IR (infrared)□ Radio Frequency (RF)□ Bluetooth□ OpAmps□ voltage regulators□ MOSFETs□ surface mount parts□ Logic ICs (40xx)□ shift registers□ Specialty ICs (555,MSGEQ7, H-Bridge, LM3914, etc.)□ Real Time Clock (RTC)□ ATtiny85□ LEDs (single, Bi, RGB)□ 7-segment display□ Alphanumeric display□ Bargraph□ LED Matrix□ LCD Panel□ Graphics Panel□ DC motor□ servo motor□ stepper motor□ solenoid □ microphone□ audio line in□ speaker□ magnets□ perma-proto board□ custom PCB□ OTHER | □ High-Level□ Assembly□ Arrays□ Structs□ bitwise operators□ I2C (TWI)□ Libraries□ ADC□ PWM□ Serial Comm. (ISP)□ Debouncing□ LookUp Table□ Polling□ Persistence of Vision□ Interrupts□ Recursion□ ISP□ EEPROM□ Processing□ Charlieplexing□ Timing related□ UML Design□ OTHER | □ Batteries□ AC/DC Adapter□ Transformers□ coils/chokes□ 12V□ 24V□ solar□ manual□ Peltier tiles□ OTHER | □ reading a schematic□ through hole soldering□ surface mount soldering□ printed circuit board layout and manufacturing□ DMM Debugging☑ CAD□ 3D printing□ acrylic fabrication☑ Word□ Excel□ Time-management□ Fritzing□ Presentation Overview☑ video creation☑ technical writing□ OTHER |
| **Design Tools** | **Engineering Fields**  |
| □ ViaCAD □ Fusion□ 3D Print□ Laser Acrylic□ PCB (Eagle)□ PCB (Other)□ OTHER | □ electrical□ computer□ mechanical□ software□ OTHER |