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. Title:**

3. **Provide a brief description of the project**:

**5. Where did your inspiration for this project come from?**

**6. What is your previous expertise in this area?**

**7. List three concepts, skills, and/or techniques you hope to improve/acquire in completing this project.**

 a)

 b)

 c)

**8. 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□ point-to-point board□ 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□ circuit layout design□ DMM Debugging□ CAD□ 3D printing□ acrylic fabrication□ Word□ Excel□ Time-management□ Fritzing□ OTHER |
| **Engineering Fields**  |
| □ electrical□ computer□ mechanical□ software□ OTHER |