****Completing this proposal with **care and consideration** is the first step towards a **successful** **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 [evaluation criteria](http://darcy.rsgc.on.ca/ACES/ISPs/LongISPEvaluationWithCOMMCADICS3U.docx). When fully completed, attach this document to an email to ACESHandin, by the deadline, under the Subject: **ISP Proposal**

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| **1. Your Name** |  |
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| **2. Project Title** |  |
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| **3. General Description** |  |
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| **4. Where did the inspiration for choosing this project come from?** |  |
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| **5. Hardware Details/Specifics** |  |
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| **6. List three concepts, skills, or familiarities you hope to gain/acquire** |
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| **7. Detailed HAND-DRAWN (sharpie/pencil) sketch of your final prototype. (Include Approximate dimensions)** |
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**NOTE: Be sure to check ALL the applicable boxes on Page 3.**

Please check all **additional** boxes corresponding to the 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□ IR proximity sensor□ Operational Amp□ voltage regulators□ MOSFETs□ Logic ICs (40xx)□ shift registers□ Specialty ICs (555, MSGEQ7, H-Bridge, LM3914, 24LC256, etc.)□ Real Time Clock (RTC)□ ATtiny84□ ATtiny85□ LEDs (single, Bi, RGB, neo)□ 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□ TH soldering□ SM soldering□ DMM Debugging□ CAD□ 3D printing□ 2D acrylic fabrication□ PCB layout and manufacturing☑ Word□ Excel☑ Time-management□ Fritzing□ Presentation Overview☑ video creation☑ technical writing□ OTHER |
| **Communication** |
| □ (wired) Serial Comm.□ (wired) SPI□ (wired) I2C (aka. TWI)□ (wireless) RF□ (wireless) IR□ (wireless) Bluetooth |
| **Design** |
| □ JLCPCB□ EAGLE (PCB)□ FUSION 360□ ViaCAD□ OTHER |
| **Engineering Fields**  |
| □ electrical□ computer□ mechanical□ software□ design□ OTHER |