

Physics 37100 Advanced Physics Laboratory I

Lab #1

(PART I: The Equipment)

1) Obtain: (*starred items are available for use in MR422)

Required:

- Arduino uno R3 or clone w/ usb cable
- Solderless Breadboard
- *Jumper Wires
- *Light sensor (photoresistor, phototransistor, photo cell)
- *LEDs
- *Resistors (100, 1K, 10K, 100K)
- *Variable resistor (any size from 1K-100K)

Optional:

- *Transistors (ex. 2N2222)
- Small DC Motor
- *Diodes (ex. 1N4148)
- SPDT 5V Relay
- Piezo Speaker
- Anything you might want for your project

Some links to Amazon:

Full Starter Kits:

Official kit:

https://www.amazon.com/Arduino-Starter-Kit-English-Official/dp/B009UKZV0A/ref=sr_1_4?s=pc&ie=UTF8&qid=1503946236&sr=1-4&keywords=arduino+kit

Similar starter kits:

https://www.amazon.com/Elegoo-Project-Starter-Tutorial-Arduino/dp/B01DGD2GAO/ref=sr_1_9?s=pc&ie=UTF8&qid=1503946381&sr=1-9&keywords=arduino+starter+kit

https://www.amazon.com/Elegoo-Project-Starter-Tutorial-Arduino/dp/B01D8KOZF4/ref=sr_1_4?s=pc&ie=UTF8&qid=1503946238&sr=1-4&keywords=arduino+starter+kit

https://www.amazon.com/QuadStore-Starter-Arduino-Beginners-included/dp/B01N0QKYSN/ref=sr_1_44?s=pc&ie=UTF8&qid=1503946388&sr=1-44&keywords=arduino+starter+kit

https://www.amazon.com/SunFounder-Project-Universal-Starter-Beginner/dp/B00D9NRIGO/ref=sr_1_128?ie=UTF8&qid=1503946754&sr=8-128&keywords=arduino

https://www.amazon.com/Elegoo-Project-Starter-Tutorial-Arduino/dp/B01D8KOZF4/ref=sr_1_153?ie=UTF8&qid=1503946858&sr=8-153&keywords=arduino

Original brand Arduino:

https://www.amazon.com/gp/aw/d/B008GRTSV6/ref=mp_s_a_1_1?qid=1448998331&sr=1-1&pi= SX200 QL40&keywords=arduino+uno&dpPI=1&dpID=51shUptLQcL&ref=plSrch

Clones:

https://www.amazon.com/gp/aw/d/B00P2FX9WY/ref=mp_s_a_1_3?qid=1448998618&sr=1-3&pi= SY200 QL40&keywords=arduino+uno&dpPI=1&dpID=51qulfzFFjL&ref=plSrch

https://www.amazon.com/gp/aw/d/B00OBSD202/ref=mp_s_a_1_2?qid=1448998664&sr=1-2&pi= SY200 QL40&keywords=arduino+uno&dpPI=1&dpID=51dgrNaaD2L&ref=plSrch

Component Kits (no Arduino included):

https://www.amazon.com/Elegoo-EL-CK-002-Electronic-Breadboard-Potentiometer/dp/B01ERP6WL4/ref=sr_1_14?s=pc&ie=UTF8&qid=1472416547&sr=1-14&keywords=arduino+kit

Breadboard:

https://www.amazon.com/gp/aw/d/B012587L2E/ref=mp_s_a_1_10?qid=1448998735&sr=8-10&pi= AC SX110 SY165 QL70&keywords=breadboard

Jumper wires:

https://www.amazon.com/Honbay%C2%AE-120pcs-Multicolored-Female-Breadboard/dp/B017NEGTXC/ref=sr_1_2?ie=UTF8&qid=1472416357&sr=8-2&keywords=jumper+wires

https://www.amazon.com/CHENBO-140pcs-Solderless-Breadboard-Arduino/dp/B01CKULUQK/ref=sr_1_13?ie=UTF8&qid=1472416450&sr=8-13&keywords=Breadboard+Board+Jumper+Cable+Wire+Kit