
BUSINESS
NETWORK
WORLD
This is...
Computer Engineering

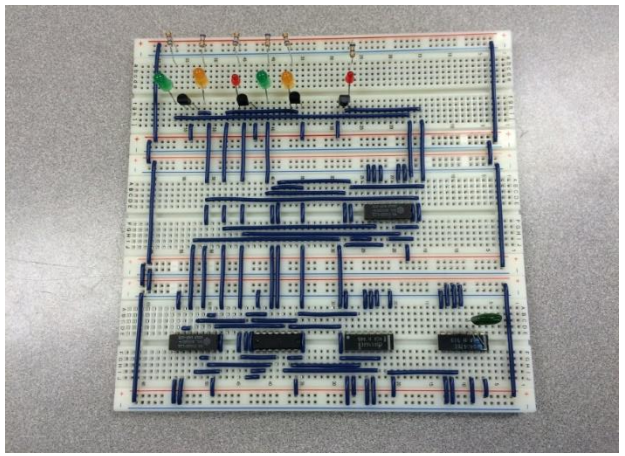
Focus

At Pickering High School, Computer Engineering has a focus on Electronics with the following major focus areas:-

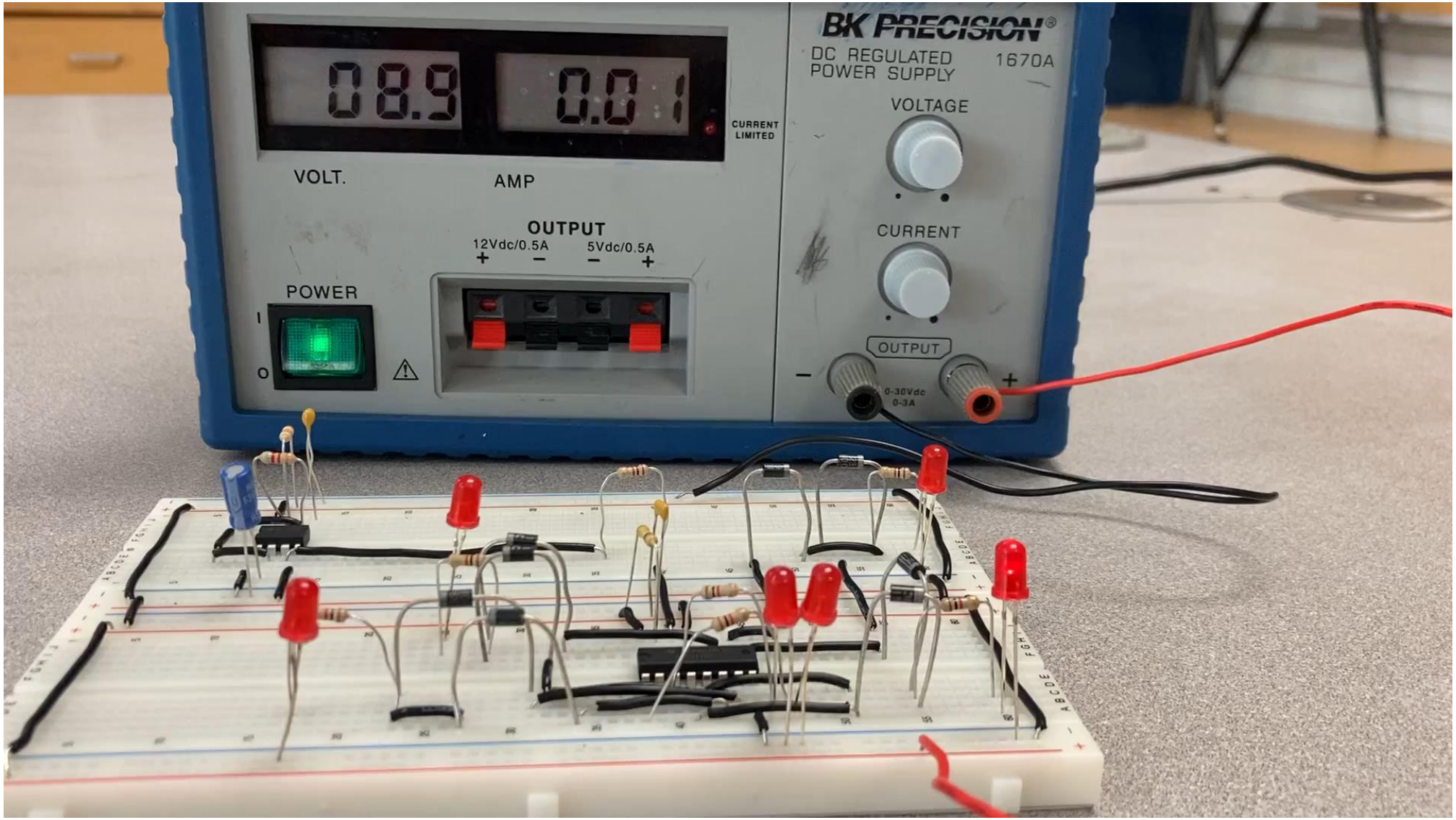
- Basic Electronics
- Digital Electronics
- Analog Electronics
- PCB design
- Hardware
- Interfacing
- Robotics

Basic Electronics

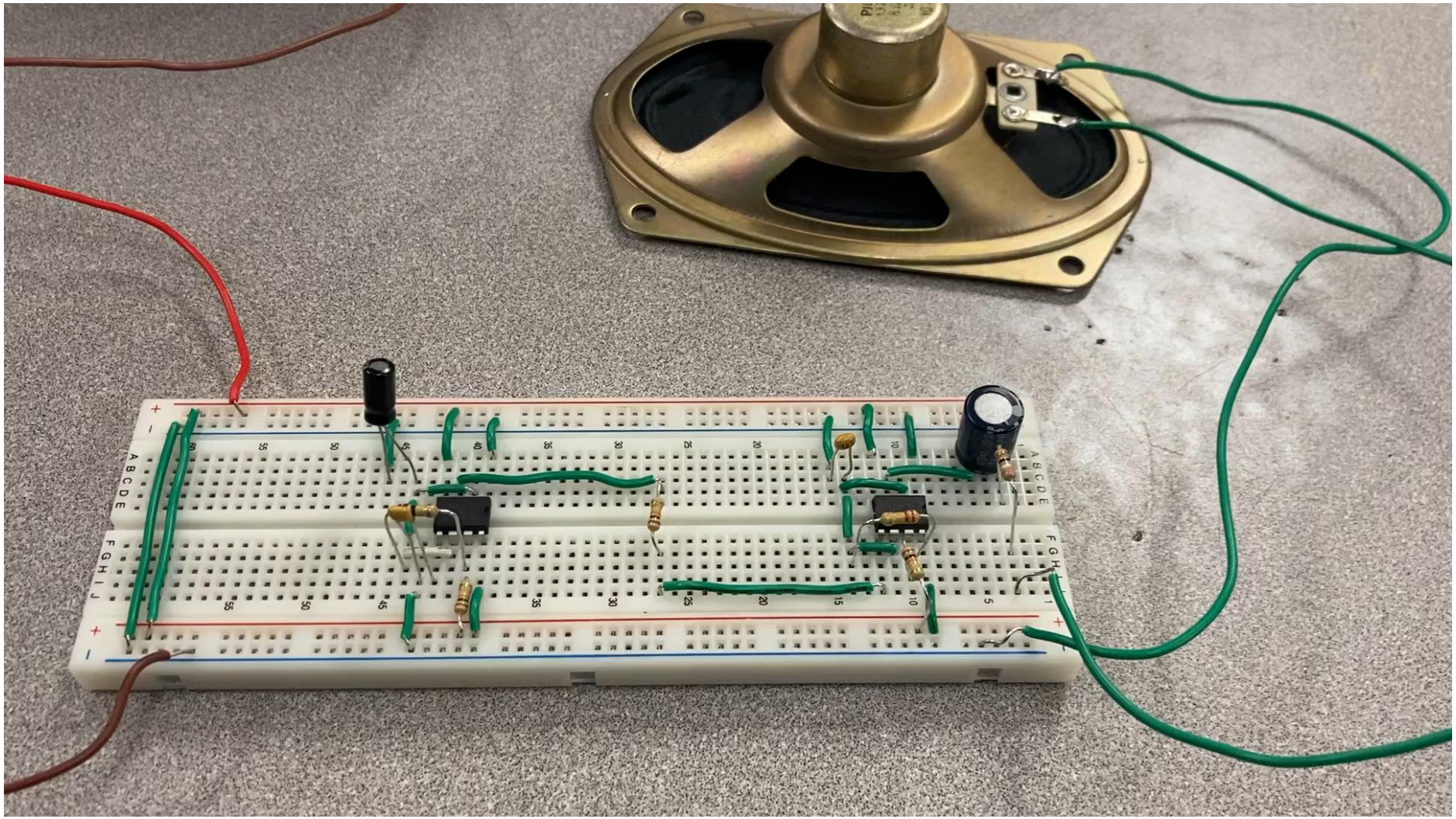
- Students will learn to identify and understand the functionalities of various electronic components.
- Students will be trained to do soldering safely and properly to avoid dry soldering.
- They will build, test and analyze simple electronic circuits using breadboards.
- Students will work with various testing and measuring equipment like power supply and multimeter.



Basic electronic project -Knight rider circuit

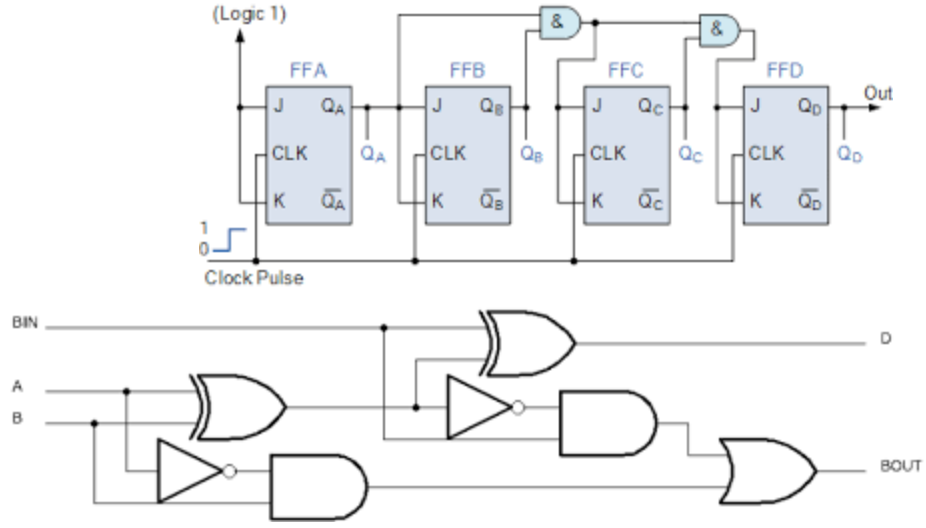


Basic electronic project –Police Siren

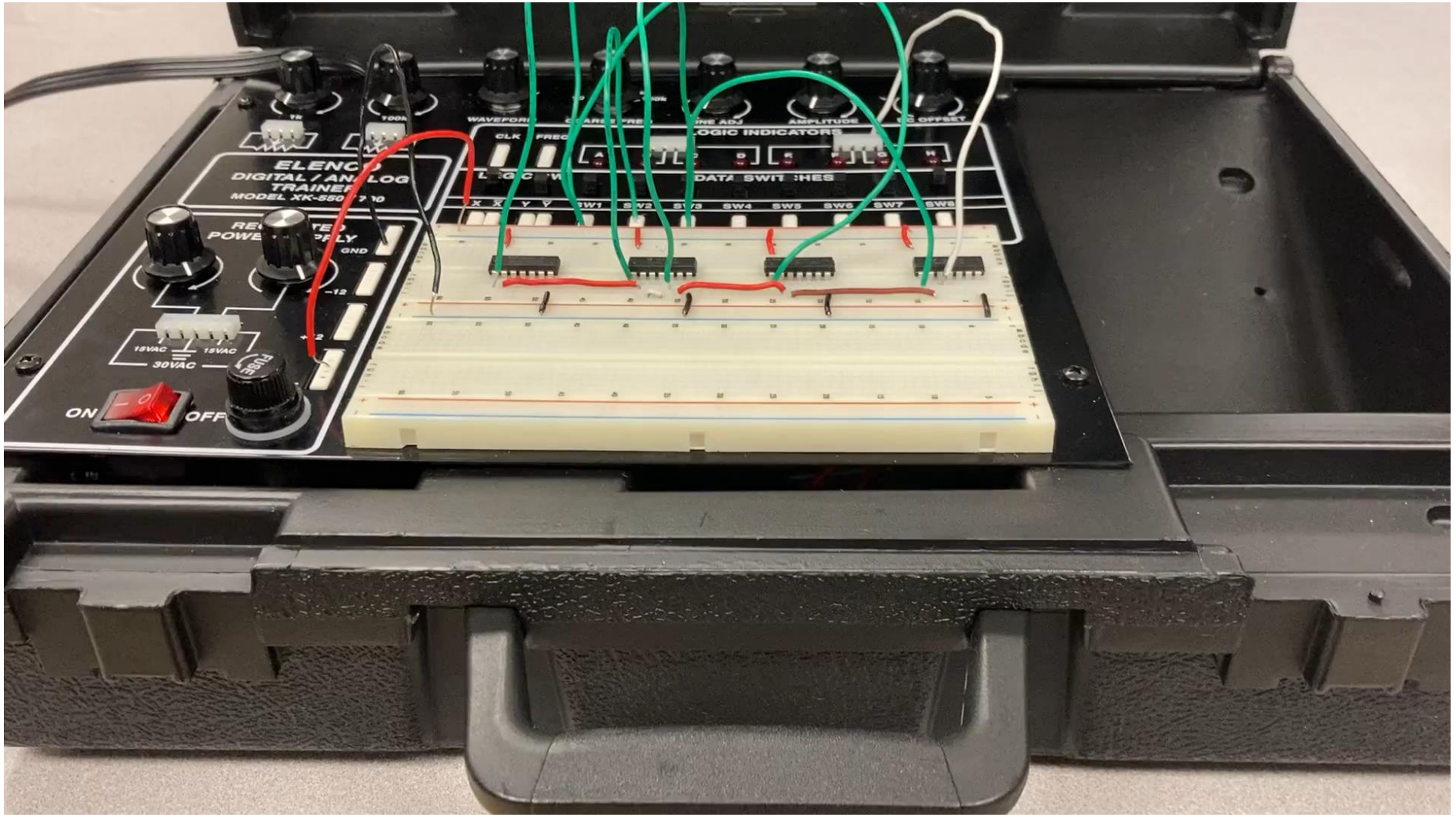


Digital Electronics

- Students will learn in depth about number systems, logic gates, flip flops, shift registers and counter circuits.
- They will be able to design digital circuits to solve real life application problems.
- For testing digital circuits, we use Digital logic trainers and logic probes.

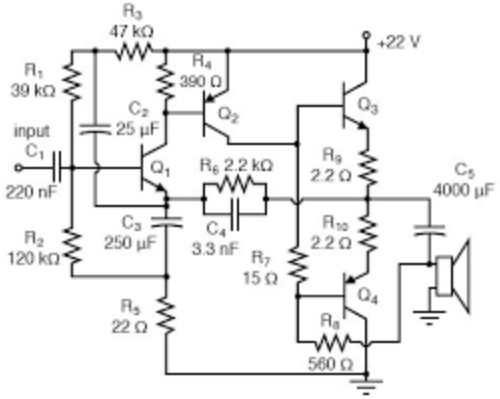


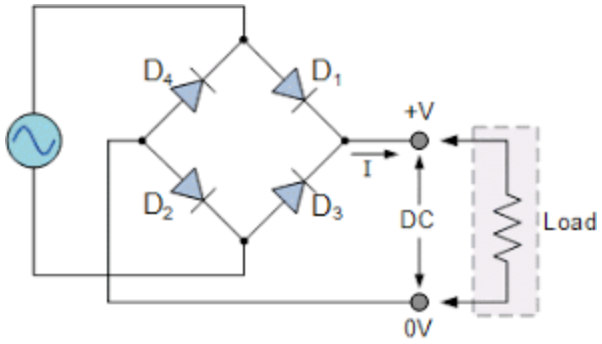
Digital Trainer to test logic circuits



Analog Electronics

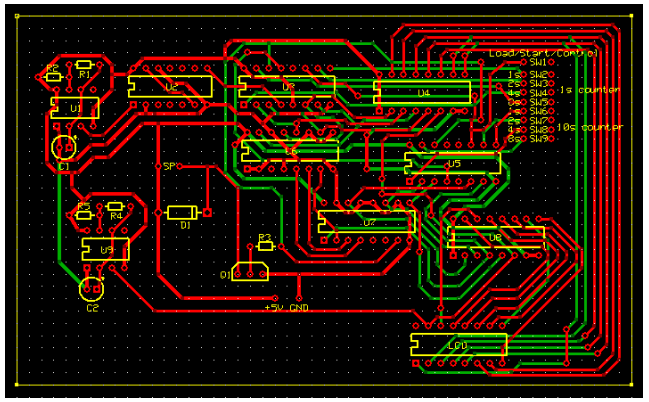
- In this topic, students will build, test and analyze analog circuits like rectifiers, voltage regulators, power supplies, amplifiers etc.
- They will learn to use equipment like step down transformers, function generators and Cathode Ray Oscilloscopes.

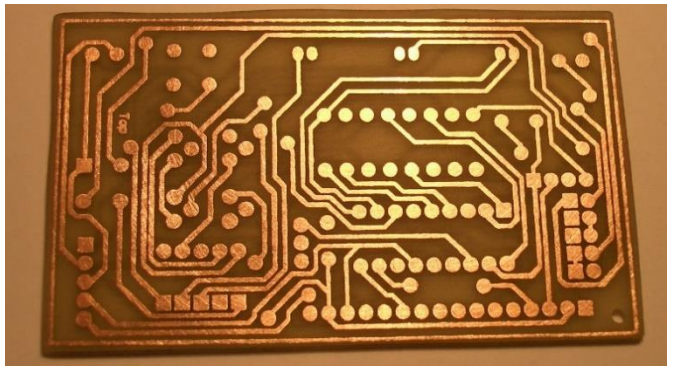




PCB Design

- Design software Express PCB is used to draw the schematics and PCB layout.
- Various design steps from the layout to the completed product is discussed in detail.

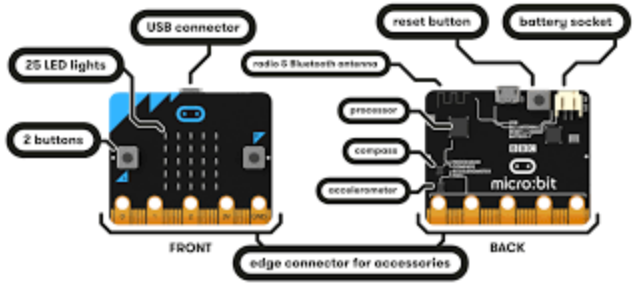




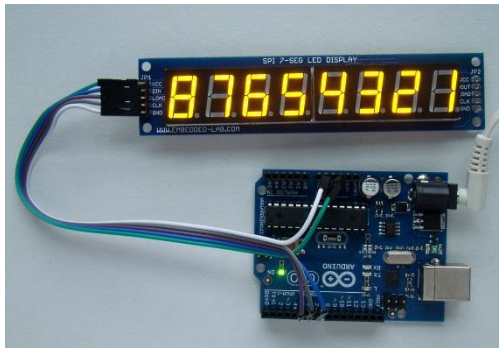
Hardware

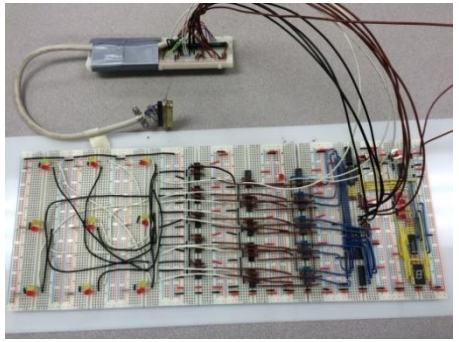
- Computer hardware unit enables students to understand the physical structure of a computer.
- Students will receive an opportunity to dissect the computer to understand its components better.
- They will research on various components, parts and their functionalities.

Interfacing

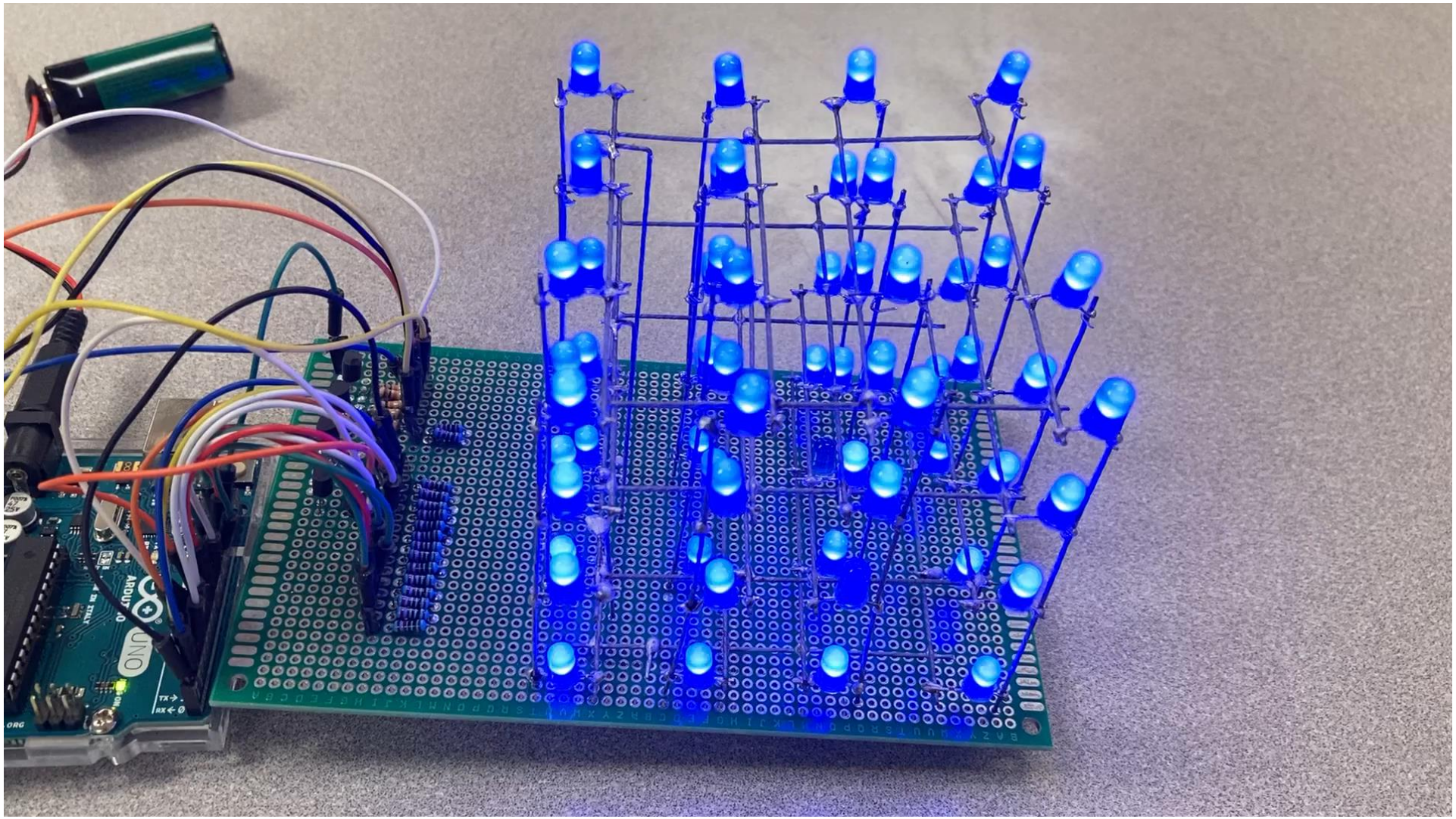


- Computer interfacing is taught using Mico:bits and Arduino Uno.
- Students will learn to write computer programs that can control the external circuits built using Micro: bits and Arduino Uno.
- Basic programming languages are taught as a part of this unit.



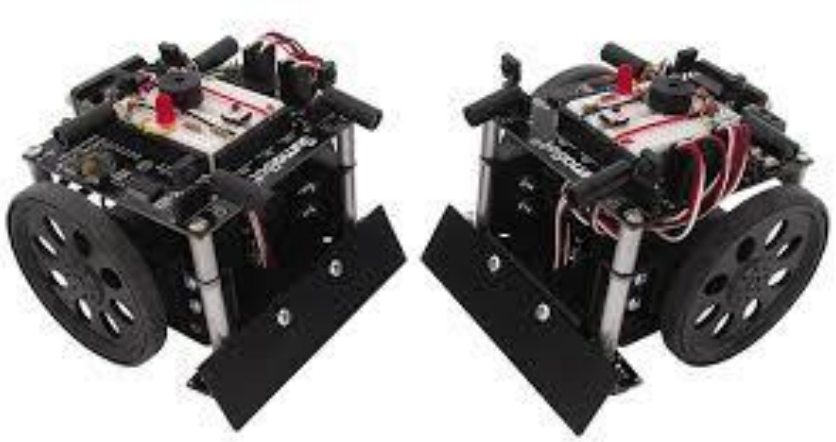


Arduino controlled LED cube



Robotics

- Robotics unit provides an opportunity to put together the electronics and programing concepts students learnt so far.
- They will be working with Sumobot robots.
- The programming language used is Basic Stamp Editor.
- Students will build and code robots to fulfill tasks like line follower, maze solver and sumo fighters.



Related Post-secondary Programs

- Computer Engineering
- Mechatronics Engineering
- Bachelor of Computing and Network
- Computer Engineering Technologist
- Computer Network Administration
- Electrical and Electronics Engineering
- Electrical and Communications Engineering
- Embedded Systems Application
- Information Technology Support Services
- Information & Communication Technology
- Information Systems Security
- Telecommunications Technology
- Software Development and Networking
- Bio-medical Engineering

And many more…

Related career options -where this course can take you

- Application specific integrated circuit (ASIC) design engineer
- Computer engineer
- Electronics engineer
- Fibre-optic network designer
- Hardware engineer
- Hardware circuit board designer
- Hardware design engineer
- Hardware development engineer
- Network systems engineer
- Network test engineer
- PLC programmer
- Systems designer
- Telecommunications hardware engineer
- Technical architect
- Wireless communications network engineer

And many more…

Contact me

If you have any questions, feel free to come and talk to me @room 160:

Mrs. Nair