

Description of Learning Modules

CAD	This module will provide students an introduction to 3D modeling using a CAD (computer-aided design) software—OnShape—that will be relevant for the use of other prototyping and machining tools. Students will be able to use this knowledge to independently explore other CAD programs (i.e. SolidWorks) and their applications.
Laser Cutting	The laser cutting module will introduce you to processing material with a laser. You will learn how to design files and run the laser cutter. You will also learn how to use a strip heater to bend acrylic.
3D Printing	This module will introduce you to the vast world of 3D printing and give you strong foundational knowledge to make the best prints.
Intro to Electronics	This module will introduce you to the basics of electricity and electronics. You will learn circuit components and how to build circuits on a breadboard. You will also learn important tools for testing and measuring circuits.
Microcontrollers, Motors & Sensors	This module will introduce you to microcontrollers, sensors, and motors. You will also learn the basics of programming an Arduino microcontroller.
PCB Design & Manufacturing	The PCB Design & Manufacturing module will teach you how to design and manufacture printed circuit boards. You will also learn how to solder.
3D Scanning	This module will introduce you to the uses of 3D scanning and the operation of 3D scanners. You will learn Meshmixer .
Thermoforming	The thermoforming module will teach you how to mold plastic sheets using the thermoformer .
Water Jetting	This module will teach you how the combination of water and abrasive at high speeds can cut through material (water jet).
Textiles	You will learn the basics of stitching and how to use the Makerspace's sewing and embroidery equipment.

Soldering	An introduction to soldering (no tutorial or DIY project). Best for students who have a need to solder but never officially learned how or need a refresher of proper technique! True soldering practice is incorporated in the PCB module.
Vinyl Cutter	This short module will introduce you to our vinyl cutting equipment.
CNC Router	You will learn how to design for and use two CNC routers to process material. One is benchtop; the other can process material on a 4'x8' bed.