



# Co-OP 120

'MVHS MAKERSPACE'  
WINTER 2016



TEACHER: A. Hallihan

WORKSTATIONS/TECHNOLOGIES:

## WORKSTATIONS...

<b>3D PRINTING</b>	<b>3D SCANNING</b>	<b>UNDERWATER ROBOTICS</b>	<b>MAKE ELECTRONICS</b>
<b>MICROCONTROLLERS</b>	<b>EMBROIDERY</b>	<b>VINYL CUTTING</b>	<b>VIDEOGRAPHY</b>
<b>ROBOTICS</b>	<b>TREBUCHET MECHANICS</b>	<b>VIRTUAL REALITY</b>	<b>iBEACON APP</b>

## TECHNOLOGIES...

<b>PRINTRBOT</b>	<b>DIITO PRO</b>	<b>M3D</b>	<b>KINECT</b>
<b>STRUCTURE SENSOR</b>	<b>OPENROV</b>	<b>MATE</b>	<b>MAKE KITS</b>
<b>SOLDERING</b>	<b>SPARKFUN</b>	<b>MAKEY MAKEY</b>	<b>ARDUINO</b>
<b>RASPBERRY PI</b>	<b>ADAFRUIT WEARABLES</b>	<b>REDBOTS</b>	<b>HUMMINGBIRD</b>
<b>SINGER FUTURA</b>	<b>ROLAND VINYL CUTTER</b>	<b>SILOUETTE CAMEO</b>	<b>iPAD MINI</b>
<b>GoPro HERO 3</b>	<b>OCULUS RIFT DEV. 2</b>	<b>POCKET OPERATORS</b>	<b>PARROT DRONE</b>

### COURSE DESCRIPTION:

MVHS MakerSpace explores STEAM projects that involve Science, Technology, Engineering, Arts and Mathematics. This course will enable students to undertake creative, innovative and entrepreneurial projects in the classroom. Students will explore a variety of technologies while designing and engineering their own project. Mentors will be established to help develop these projects as well as instruction on the basics.

The course is designed to apply the 4 C's...Creativity, Critical Thinking & Problem Solving, Collaboration, and Communication. These skills are beneficial in any workplace and are essential for life-long learning. The goal of the course is to improve these skills so they can be used in any of your future endeavours.

### SCOPE AND SEQUENCE:

- Engineering Design Process
  - Intro. to design and engineering (PBS Design Squad Challenges)
  - History of engineering
  - Documenting your work...keeping online journal & video editing
- Safety Modules [<http://nbcsa.ca/english/elearning.htm>]
  - Orientation
  - WHMIS
- Workstation Basics
- Final Projects

<b>EVALUATION:</b>	Journal/TechPoints/Activities/Assignments	50 %
	Project #1 [due March 22 <sup>nd</sup> ]	25 %
	Project #2 [due May 26 <sup>th</sup> ]	25 %

## EVALUATION COMPONENTS:

### *Online Journal: Documentation (webpage devoted to your project)*

- Submit an engineering proposal that outlines your project ideas.
- Weekly journal entries that document updates your project with any notes, pictures or video clips.
- Discussions with a mentor whether it be emails, skype or visit.

### *Techpoints:*

Complete a choice of optional activities that demonstrate the following three components:

- Promotion of technology
- Exploration of technology
- Application of technology
- A maximum of 100 TechPoints may be accumulated.
- Accumulation of these points will be done on an inventory sheet.

*Completion of a student project is a requirement for this course. The components of the project are...*

### *Part I: Presentation*

- Develop an engaging presentation for the class that reflects and summarizes your project.
  - Visuals should be included (graphs, pictures, videos, etc.).
  - Duration will be 5 minutes.

### *Part II: Summary Video*

- Explanation of setup and equipment needed.
- Demonstration of the project.

## WEBSITES:

- **COURSE HOMEPAGE:** <http://mvhs.nbed.nb.ca/other/mvhs-make>
- **STEM NORTH:** <http://stemnorth.nbed.nb.ca/>
- **YOUTUBE CHANNEL:** <https://www.youtube.com/channel/UC-hZtA0UUEzndBMm1wlme4Q>
- **TWITTER ACCOUNT:** @MVHS\_ROV #MVHSMMAKE