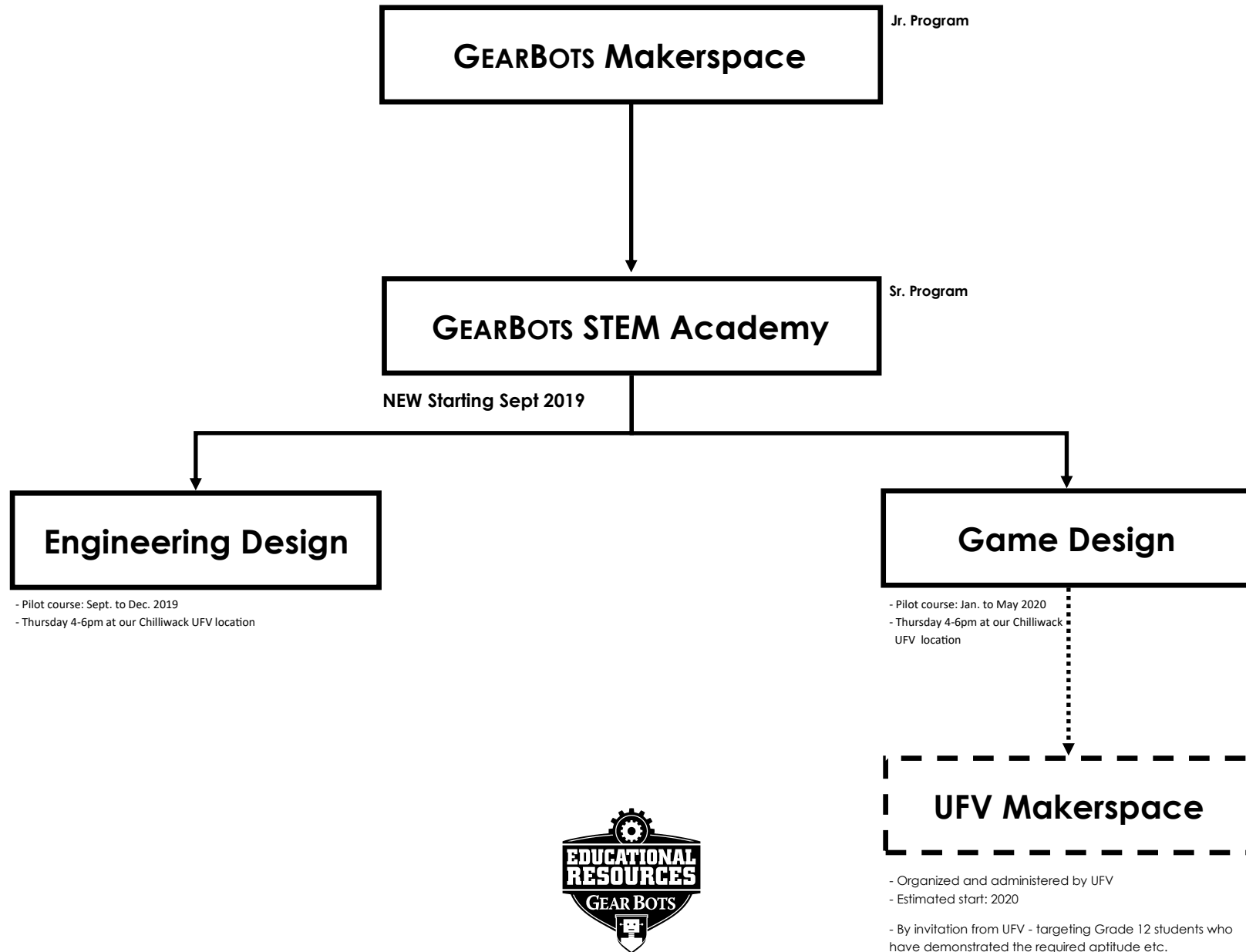


# GEARBOTS Makerspace Program



# GEARBOTS MAKERSPACE PROGRAM

- Currently being offered at all our locations
- Considered our Jr. Makerspace program and feeder for the academy



## TARGET:

- Ages 9 to 12+

## FOCUS:

- Developing the core skills required to be a confident Maker in our program

## LOCATIONS AND DATES:

- Abbotsford: Abbotsford Christian Middle School on Mondays from 3:30-5:30pm
- Chilliwack: UFV Trades and Technology campus on Wednesdays and Thursdays from 4-6pm

## COURSE LENGTH / FEE:

- 7 week course (14 hours per course)
  - Courses offered from Sept.-Oct., Nov.-Dec., Jan.-Feb. and April-May each year
  - Summer camps in July and August at each location
- Fees: \$190.00 + GST per course

## CONTENT COVERED:

- Introduction to coding robotics unit (mandatory for all new participants in our program regardless of age)
  - Approx. 20 hours to complete
- Introduction to digital design for modern manufacturing using the 3D printer and laser cutter
  - Mandatory for all new participants in our program regardless of age
- Maker Menu items: Focus on coding, electronics, digital design for modern manufacturing
  - Including but not limited to: EV3 robotics, introduction to digital manufacturing – 3D design, Inkscape software (for 3D printing and laser cutting), introduction to coding (Scratch, Blockly, JavaScript, Python, Arduino IDE), MakeBlock, Raspberry Pi, video game design using GameMaker / Unity, littleBits, MakeyMakey, Micro:Bit, OttoBot, Edison robot, Strawbees QuickBot, MakeDo, SumoBot project, K8 robot, ElecFreak kits, Kano, Piper, robot and robotics arm build project, learning to solder etc.

## SKILL SET DEVELOPED:

- Aptitude, self-regulation, maturity, focus, teamwork skills, communication, collaboration, critical thinking, creativity, personal drive/interest, being reliant, attention to details, following instructions, independent learning, core technical skills, computational thinking, and reliance

# GEARBOTS STEM ACADEMY

- Our Sr. Makerspace program - STEM = Science, Technology, Engineering, Math

## PREREQUISITE:

- Successful completion of one or more of our Jr. Makerspace courses. Invited by one of our instructors and has demonstrated the skills necessary for success in this program. Must have an appreciation for physics/math (computational thinking).

## TARGET:

- Ages 12+ by invitation only
  - Candidate must demonstrate a readiness and a willingness to accept this challenge. We will identify and communicate with parents directly when we feel the student has demonstrated a readiness for the next level. Students could be eligible for one or both our academy options.
  - Soft skills required: aptitude, self-regulation, maturity, focus, teamwork skills, communication, collaboration, critical thinking, creativity, personal drive/interest, being reliant, attention to details, following instructions, independent learning, core technical skills

## FOCUS:

- Developing intermediate to advanced skills in: coding, engineering design, modern fabrication, and electronics

## LOCATIONS AND DATES:

- Chilliwack: at UFV Trades and Technology campus on Thursdays from 4-6pm
  - Engineering Design course from Sept. to Dec. 2019 and Game Design course from Jan to May 2020

## COURSE LENGTH / FEE:

- 14 week course (28 hours per course) - \$420.00 + GST
  - Courses offered from Sept.-Dec., Jan.-May each year (no classes during spring break)

## INSTRUCTIONAL FORMAT:

- Direct instruction/lecture format with lab time to work on long-term projects
  - Projects will have the opportunity to develop over a number of years and/or take more than 14 weeks to complete

## OTHER:

- It is strongly encouraged that participants in the program have their own laptop so they can continue to work on their coursework throughout the week. A 3.0 USB 32G thumb drive will be required..
- Registration for this program will be done through a special link emailed directly to the participant's parents/guardians for payment.

## GEARBOTS STEM ACADEMY: ENGINEERING DESIGN

**Focus:** Electronics, robotics, coding with a focus on JavaScript, Andriod App development, RC/Wifi and autonomous vehicles, machine learning, Phonegap Cordova, Particle.io and TensorFlowjs

- Course agenda will be set by the instructor and cover aspects of the items listed above.

**Date / Time:** Thursdays from 4pm-6pm

**Location:** Chilliwack: UFV Trades and Technology campus in the electronics lecture classroom - #2030

**Course Length:** 14 weeks

- 2 hours per class (course offered from Sept.-Dec. 2019)

**Fees:** \$420.00 + GST per course

- additional fees may apply for supplies and equipment

**Instructor:** Mr. Jeremy Ellis

## GEARBOTS STEM ACADEMY: SOFTWARE DESIGN

**Focus:** Understanding all the various aspects of effective coding skills through an interactive Game Design environment (coding will be done in a C-based environment)

- Course agenda will be set by the instructor and cover aspects related to various coding languages and graphic design skills

**Date / Time:** Thursdays from 4pm-6pm

**Location:** Chilliwack: UFV Trades and Technology campus in the electronics lecture classroom - #2030

**Course Length:** 14 weeks

- 2 hours per class (course offered from Jan.-May 2020)

**Fees:** \$420.00 + GST per course

- additional fees may apply for supplies and equipment

**Instructor:** Mr. Laszlo Kovacs



# **TIMELINE:**

## **1. Pre STEM Academy Course (Pilot)**

- Focusing on key coding concepts (computational thinking) using Javascript as the main language
- Course agenda will be set by the instructor and will act as a pilot program to gauge readiness for the STEM Academy
- By invitation only

**Date / Time:** April to May 2019 on Thursdays from 4pm-6pm

**Location:** Chilliwack: UFV Trades and Technology campus in the electronics lecture classroom - #2030

**Course Length:** 7 weeks

- 2 hours per class

**Fees:** \$190+ GST

- additional fees may apply

**Instructor:** Mr. Laszlo Kovac

**Registration and payment:**

Through a shared link sent via email (Payment via registration software / PayPal)

## **2. GEARBOTS STEM Academy: Engineering Design Course**

- Piloting from September to December 2019
- By invitation only

**Registration and payment:**

Through a shared link sent via email (Payment via registration software / PayPal)

## **3. GEARBOTS STEM Academy: Game Design Course**

- Piloting from January to May 2020
- By invitation only

**Registration and payment:**

Through a shared link sent via email (Payment via registration software / PayPal)