Course Outline – Robotics71

Robotics71 – Engineering Your Future
A District STEAM Program

Instructor and Head Coach: Ryan Buchanan - Ryan.Buchanan@sd71.bc.ca

Assistant Coach: Kemp Currie - Kemp.Currie@sd71.bc.ca

Program Coordinator: Steve Claassen - Steve.Claassen@sd71.bc.ca

Program Description: Robotics71 is a district-wide robotics program with a focus on building the engineering capacity of our students. This is a year-long program which will run after school to facilitate collaboration between all the local high schools and distance education students. We will be building and coding robots to compete in the VEX Robotics competitions, Skills Canada Robotics competitions, as well as learning how to use new design and machining tools such as 3D printers and laser engravers.

Schedule: Tuesdays and Thursdays: 4:00pm-6:00pm* (Probably longer, especially in the build-up to tournaments)

Attendance and Course Credit: The Robotics71 program is a **hands-on, participation-based course.** Course credit can be granted for students who are in regular attendance, contribute meaningfully to their team's development, compete in at least one regional tournament, and who keep an up-to-date Engineering Journal. Credit can be earned for Robotics 10/11/12, Engineering 11/12, Mechatronics 12 and potentially others.

Regular attendance is recommended but not required for those who want to join the club for experience, to make friends, or to build a robot to compete in regional tournaments.

Course Fees: $50 – to cover basic travel expenses and Team T-shirts

Marking:

- Engineering Journal: 30%
- Community Contribution: 30%
- Robot Development: 40%

Safety: Safety is paramount in a shop environment, for everyone in the class. If a student is disruptive during safety training, and/or displays any unsafe behaviour in the shop, they will receive a warning. If this behaviour continues, removal from the shop may be necessary to avoid injury to themselves or others.

Respect: Highland's shops are safe spaces, and everyone is welcome. It is 2021, and we act accordingly. Disrespectful language and/or behaviour is not tolerated.

Phones: Should be used as a tool for communication, recording, research and calculations. If your bad habits start distracting yourself or others your phone access in class will need to be restricted.

Plagiarism/Cheating: "*Steal from the best, invent the rest.*" Collaboration is essential in an ever-changing environment like robotics. "Borrowing" a working bit of code to test a theory is standard practice; "borrowing" an entire code you don't understand to run your bot is cheating. Students will be graded on work they have produced themselves and can explain upon request.

Core Competencies: Are essential components of all courses and Robotics71 is no different:

- **Communication:** The world needs people who can speak to the machines… learn their language to thrive in the digital age (and possibly save yourself in the coming robot apocalypse).
- **Creative and Critical Thinking:** Failing fast and failing often requires some adapting to problems and creative solutions.
- **Personal and Social Responsibility:** "Shop Culture" is essential to any shared working space and building a positive shop culture means personal responsibility in cleaning up after yourself and leaving the space better than you found it.

Unsure about Anything? Please don't hesitate to ask Mr. Buchanan for help, especially if you're unsure how to use a tool safely. For questions outside of class, email him at **Ryan.Buchanan@SD71.bc.ca**.

What you need to bring:

- Respect for yourself, the people around you, the workspace, and the tools we're using
- Your own snacks or money for pizza is recommended
- Enthusiasm and Creativity