**Robotics Presentation Script**

**What is Robotics?**

The word “robotics” can be broken into to 2 parts, “robot” and “ics”. A robot is a mechanical device that can be programmable to perform tasks within its environment. The word “ics” symbolizes arts or sciences or can be a branch of study or profession. So overall, robotics is the science, technology, manufacturing, and application of robots.

**Training and Education Required.**

One main career that you can purse includes robotics engineering. If you are interested in things such as aerospace studies, electrical or computer engineering, mechanical engineering or computer science, then you might be interested in robotics engineering. Robotics engineering can include all the careers I mentioned. You can make robots that go to mars like NASA did. Things like that requires knowledge of all the things I mentioned.

If you want to be an robotics engineer it usually requires a university pathway.

High school requirements:

Ontario Secondary School Diploma

Grade 12 English (ENG4U)

Grade 12 Calculus and Vectors (MCV4U)

Grade 12 Advanced Functions (MHF4U)

Grade 12 Chemistry (SCH4U)

Grade 12 Physics (SPH4U)

One additional Grade 12 university-level or university/college-level (mixed) course

You might ask as to why you need chemistry. Well, you might have seen some videos online of which shows improvement in technology for medical purposes. Things like that require prior knowledge in chemistry and as well as biology. Computer science is not listed as a requirement but for any engineering courses it is a highly recommended course as it gives you some background knowledge which can be very useful. Our school also offers robotics courses such as manufacturing, engineering, and robotics technology and computer engineering: robotics and control systems which can be useful to take if pursuing this career.

**Relation to Computer Science.**

I’m going to ask the class a question. ASK: What have we learned in computer science so far? One of the main things we learned includes programming. Robots do not have their own brain which they can use at their will. Robots must be programmed for them to perform tasks. Whenever you write a code in this class, the first time you run the program, it probably does not run as expected in which you probably try over and over again until it works. Similarly, with robots it requires a lot of experimentation before it is ready to perform the task it is assigned. Computer science is the base for robotics as a main portion of it includes programming.

**Things That Make Up a Robot.**

A useful robot usually consists four of these things: sensing, movement, energy, and intelligence. The robot needs to be able to sense its surroundings in which it can make appropriate actions on what to do. Secondly, it should be able to move around because what use is a robot that is not able to move around? Robots that are used to carry things are required to move it from one place to another. Robots that are used gather samples are required to transport the samples. Moreover, a robot requires energy rather to perform tasks. We cannot power ourselves without food, similarly, robots require a source of energy to be able to perform certain tasks. Lastly, it requires intelligence to be able to run. Robots do not have a brain like us, therefore, we have to assign it to perform certain tasks through programming.