Arundel High School
Introduction to Robotics
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F001

Course Description:
Introduction to Robotics will be broken down into four main components:
Introduction to robotics, Introduction to programming, Introduction to mechanical design, and a robotics in society unit.

What does class look like:
Students will be able to build, program and understand how robots operate and complete challenges using given robotic supplies.

Required Materials:
Journal, Pen/Pencil
USB Recommended for Storage of programs

Resources:
Vex Robotics – www.vexrobotics.com
Online Curriculum: www.cs2n.org

Course Objectives:
After successful completion of this course, the students should be able to:

1. Explain what the different basic components of a robot area and how they perform their function
2. Discuss how robots are used today in industry, research and in education
3. Build various robots to navigate through challenges given
4. Describe the relationship between a programmer and a machine
5. Identify correct ROBOTC code and how to create their own
6. Apply programming knowledge to create movement using motors
7. Assemble a code to allow a robot to navigate around an obstacle
8. Manipulate drive motion and apply corrective action for straight motion
9. Program a joystick to all wireless motion via human interaction
10. Incorporate sensors for ultimate robot control
11. Calculate the coefficient of friction and use the principles to design a solution to a problem
12. Calculate gear ratios and use the principles to design a solution to a problem
13. Design and create a Vex drivetrain to solve a solution to a problem
14. Use different types of possible drive trains and manipulators to solve a given problem
15. Design and create a Vex manipulator to solve a solution to a problem

Weighted Categories

Category	Percentage of Overall Grade
Assessments (SA)	**65%**
Classwork	**15%**
Homework	**10%**
Quarterly	**10%**
Total	*100%*