Course Name: Robotics

Course Description: This course provides an introduction to the engineering design process using simple machines and robotics. We will begin the elective examining the different components of simple machines using the LEGO Education Solutions. The course will examine the use of robots to solve problems in society. The final goal is for students with no programming background to work with coding using Dot and Dash and Raspberry Pi. Students will learn to construct, control and program these robots through investigative and exploration activities. Research projects will expose the students to the engineering process.

Wk #1- Introduction to Robotics Classroom, Rules and Procedures. Lego Inventory.
Wk#2 - Introduction to all simple machines. Pulley instruction and build.
Wk#3 - Lever instruction and build.
Wk#4 - Incline plane instruction and build.
Wk#5 - Wedge instruction and build.
Wk#6 - Screw instruction and build.
Wk#7 - Introduction to robotics and robots. History and ethics.
Wk#8 - Artificial intelligence-what it is, pros and cons.
Wk#9 - Parts of a computer; graphics card, Ram, hardware vs software.
Wk#10 - Parts of a computer continued.
Wk#11 - Gaming Systems; compare and contrast different types
Wk#12 - Gaming Systems Presentations
Wk#13 - Animatronics and Hydraulics : Jurassic Park video
Wk#14 - Introduction to Coding: What is coding and the different types; Java, HTML, etc.
Wk#15 - Coding types continued.
Wk#16 - Coding games. Code.org
Wk#17 - Introduction to Raspberry Pi and materials in the Stem lab.
Wk#18 - Raspberry Pi and Stem introduction continued.
Wk#19 - Introduction to Robotic Career project
Wk#20 - Robotic Career Presentation

Grading-Add grades to gradebook (p/f or check) each week. The final grade is pass/fail.

3 days per week, 2 semesters.