EL PASO HIGH SCHOOL STEM

PROJECT-BASED LEARNING LESSON PLAN

COURSE: Robotics & Automation I

UNIT OF STUDY: Introduction to Robotics

TEACHER: Rick Ortiz

PROJECT SCOPE: 21-AUG-2017 — 25-AUG-2017

STANDARDS ADDRESSED: HS.CTE.O.RA: 4.B, 4.E, 5.D, 6.D, 9.A, 11.B

STUDENT OBJECTIVES:

- Students will understand how to utilize the VeX Robotics Design System.
- Students will understand Robotic Lab safety fundamentals.
- Students will identify different components of the VeX Robotics Design system.
- Students will understand wiring fundamentals.
- Students will understand how to build a basic robotics system.
- Students will assemble VeX Robotics testbed used for in-class practice.

PROJECT TITLE: VeX Robotics Test Bed Construction

INSTRUCTIONAL MATERIALS: VeX Educational Robotics Design System, Student workstations, Internet Access, Robotics Toolkit

PROJECT BRIEF: Students will build the VeX Robotics test bed utilizing the various components offered by the system. The testbed will be used in future projects related to Robotics Programing Fundamentals.

- Students will construct a VeX test bed with the following components:
  - VeX Cortex
  - Ultrasonic Rangefinder
  - Potentiometer; Bump Sensor; Limit Switch
  - 2 Motors
  - 1 Servo
  - Claw
  - Light Sensor; Line Tracker

Students will learn robotics lab safety fundamentals while performing hands-on tasks. Concepts will be integrated into project-based learning environment.

Cross-Curricular Connection: 112.39.C: 4.A Physics, Technology

ASSESSMENT:

T: Direct observation; observation checklist.

S: Engineering notebook reflection and documentation.

INSTRUCTIONAL STRATEGIES: Hands-on training, Technology, Collaborative Learning

DIFFERENTIATED INSTRUCTION SUPPORT:

Provide accommodations to students in accordance with IEP. Instructional aides (videos, graphic organizers, etc.) provided for ELL's.