

# **ROBOTICS I ARTICULATION**

## **Pierce County Careers Connection Dual Credit Articulation Agreement**

**Upon completion of a full year of high school or equivalent to the following competencies:**

	<b>INTRODUCTION TO PLC TRON 117</b>
	-State the function of a PLC in an industrial application.
	-Using industry-relevant equipment and to industry standards of time and accuracy, program and document a bit level instruction.
	-To industry standards of time and accuracy, program and document a compare instruction.
	-To industry standards of time and accuracy, program and document a word instruction.
	-To industry standards of time and accuracy, program and document a timer instruction.
	-To industry standards of time and accuracy, program and document a counter instruction.
	<b>SENSING OUR ENVIRONMENT TRON 141</b>
	-As applicable to industry standards, compare and contrast sensors and transducers,
	-Describe techniques used in industry to determine temperature.
	-Describe techniques used in industry to determine pressure.
	-Describe techniques used in industry to determine metal content.

	-Explain the process of Analog-to-digital (A/D) conversion as applicable to automation.
	-Describe various types of proximity sensor used in automation processes.
	<b>EMBEDDED CONTROLLERS TRON 147</b>
	-Explain how the use of embedded controllers can increase the efficiency of a mechatronic system.
	-Using industry relevant equipment and to industry standards of time and accuracy, use a code monitor to validate intermediate processes.
	-To industry standards, fully document a program to include header information and comments relating to its functionality and interfacing.
	-Using industry relevant equipment and to industry standards of time and accuracy, program an embedded controller to source digital outputs.
	-Using industry relevant equipment and to industry standards of time and accuracy, program an embedded controller to source digital inputs.
	-Using industry relevant equipment and to industry standards of time and accuracy, program an embedded controller to perform an analog to digital conversion.

---

**A student earning a "C" grade or better may earn college credit at the following college:**

<u>College</u>	<u>Course</u>	<u>Credits</u>
Bates Technical College	TRON 117	4
	TRON 141	4
	TRON 147	5