



**\*Robotics Engineering II  
(Scholar)**

**Eligible Grade Level:  
Grades 11, 12**


*Prerequisite: C or Better in Robotics  
Engineering I*

In Robotics Engineering II students will expand on the engineering, building and programming skills developed in the Robotics Engineering I course. Students increase their engineering acumen as they refine their understanding of the potential of robotic development. Students will have the opportunity to participate in robotics engineering design challenges by competing among each other, as well as students from other schools by joining TSA (Technology Student Association).



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Technology  
Education



**Robotics Engineering  
and Manufacturing/  
Production Technology**



## \*Manufacturing/ Production Technology I

**Eligible Grade Level: 9, 10, 11, 12**

Students enrolled in Manufacturing/Production Technology I will receive both theory instruction and laboratory experience as they custom manufacture products. This course is designed to introduce students to tools, machines, materials, and processes. Students will also be exposed to technologically advanced equipment that will be used for design and layout. Student will learn about manufacturing technology, technical systems, and the historical evolution of manufacturing. Tool safety, machine operation, and applied mathematics are all emphasized throughout the course.



## \*Manufacturing/ Production Technology II

**Eligible Grade Level: Grade 10, 11, 12**

*Prerequisite: C or better in Manufacturing/Production Technology I*

This course is a continuation of Manufacturing/Production Technology I. Students will examine the organization and management of manufacturing endeavors. The class culminates in the design and production of a product in a manufacturing enterprise situation, which closely parallels the functions of a manufacturing corporation. CAM software and CNC equipment including a CNC router & lathe are introduced and utilized in the production process. Primary goals are to improve ability to reason about design, material, and process alternatives. A continual emphasis of safety, applied mathematics, problem solving skills, and technology are further developed in Manufacturing/Production Technology II.



## \*Robotics Engineering I (Scholar)

**Eligible Grade Level:  
Grades 10, 11, 12**

*Prerequisite: C or Better in Algebra II*

This course introduces students to agile robotics and their basic programming. Students participate in activities that integrate STEM (Science, Technology, Engineering, and Mathematics) while they design, build, program, and test LegoMindstorms NXT and VEX robots that utilize light, sound, ultrasonic, touch sensors and many more. Students will use several software applications to program autonomous robots. Throughout the course, students will learn about the history of robotics and the terminology used in robotics engineering and programming.



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