Robotics, Engineering and Manufacturing Curriculum Map
CIP Code 15.9999

Industry Standards
OSHA
National Society of Professional Engineers
American Association of Engineering Societies
Association for Manufacturing Technology
SAE International

This is a 2 instructor program. This curriculum map represents the content covered for the Robotics and Engineering portion of the program. Students take Robotics and Engineering for one semester and Manufacturing for the other semester each year.

Level 1	**1st Qtr Group A** New Student Orientation General Shop Safety Electrical Safety Soldering Safety Learning to Solder Introduction to AutoCAD	**2nd Qtr Group A** LOTO Procedures OSHA 10 (CareerSafe) **Basic Electricity** Multimeter Troubleshooting Electrical Circuits **Teamwork** Constructive Feedback Conflict Resolution Active Listening Techniques Verbal and Written Communication	**3rd Qtr Group B** General Shop Safety Electrical Safety Soldering Safety Learn to Solder Introduction to AutoCAD	**4th Qtr Group B** LOTO Procedures OSHA 10 (CareerSafe) **Basic Electricity** Multimeter Troubleshooting Electrical Circuits **Teamwork** Constructive Feedback Conflict Resolution Active Listening Techniques Verbal and Written Communication
Level 2	**1st Qtr Group A** **Knowledge of Engineering** **Teamwork** **Properties of Materials** Properties of Natural, Composite, and Synthetic Materials Methods Used to Alter Materials **Basic Electronics** Eight "M's" in Quality Control	**2nd Qtr Group A** **Ethics in Engineering** **Kinematics** **Total Quality Control** ISO 9000 **Fluid Power Systems** Designing, creating and Testing a Fluid Power System Components of a Fluid System	**3rd Qtr Group B** **Knowledge of Engineering** **Teamwork** **Properties of Materials** Properties of Natural, Composite, and Synthetic Materials Methods Used to Alter Materials **Basic Electronics** Eight "M's" in Quality Control	**4th Qtr Group B** **Ethics in Engineering** **Kinematics** **Total Quality Control** ISO 9000 **Fluid Power Systems** Designing, creating and Testing a Fluid Power System Components of a Fluid System
Level 3	**1st Qtr Group A** **Manufacturing Processes** Relationship of Time and Cost to Manufacturing Systems Primary vs. Secondary Manufacturing Processes Evaluating and Presenting a Production Line Activity **Engineering Problem Solving and Design Processes** Applying the Steps of an Iterative Design Process Creating an Engineering Solution that Meets a Given Design Brief AutoCAD and Fusion	**2nd Qtr Group A** **Modeling** Identifying the Three Areas of Modeling, e.g., Physical, Conceptual, and Mathematical Creating a Scale Model or Working Prototype Evaluating a Scale Model or a Working Prototype Generating a Design Improvement to Address Specific Flaws or Failures Creating a Proposal for an Engineering Project Participating in a Design Review Preparing a Schedule for a Design Project Writing an Engineering Problem Statement	**3rd Qtr Group B** **Manufacturing Processes** Relationship of Time and Cost to Manufacturing Systems Primary vs. Secondary Manufacturing Processes Evaluating and Presenting a Production Line Activity **Engineering Problem Solving and Design Processes** Applying the Steps of an Iterative Design Process Creating an Engineering Solution that Meets a Given Design Brief AutoCAD and Fusion	**4th Qtr Group B** **Modeling** Identifying the Three Areas of Modeling, e.g., Physical, Conceptual, and Mathematical Creating a Scale Model or Working Prototype Evaluating a Scale Model or a Working Prototype Generating a Design Improvement to Address Specific Flaws or Failures Creating a Proposal for an Engineering Project Participating in a Design Review Preparing a Schedule for a Design Project Writing an Engineering Problem Statement