
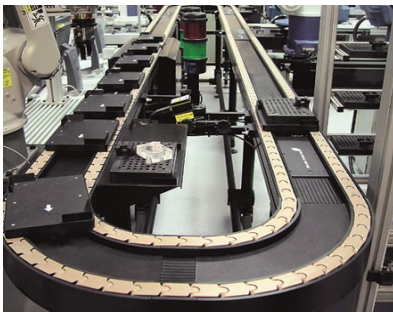





The newly renovated Career and Technical Education (CTE) facilities at McQueen High School are made up of four pathways designed to prepare students for college and career success:

- Manufacturing Technologies
- Automation Technology
- Automotive Technology

<b>Manufacturing Pathway</b>	<b>Automation Pathway</b>	<b>Automotive Pathway</b>
<p><u>Required Courses:</u></p> <p>Manufacturing Technologies I            Manufacturing Technologies II            Manufacturing Technologies III            Manufacturing Technologies AS</p> 	<p><u>Required Courses:</u></p> <p>Automation Technology I            Automation Technology II            Automation Technology III            Automation Technology AS</p> 	<p><u>Required Courses:</u></p> <p>Automotive Technology I            Automotive Technology II            Automotive Technology III            Automotive Technology AS</p> 

**See back for course descriptions**

**Benefits of Enrolling in a Career & Technical Education Pathway ...**



- ⇒ Increasing student interest through high quality facilities and curriculum
- ⇒ Developing technical, academic, & employability skills for life-long success
- ⇒ Enhancing work-based learning opportunities
- ⇒ Aligning classroom learning to real-world problem solving
- ⇒ Engaging in strong partnerships with industry
- ⇒ Aligning course outcomes with certifications & post-secondary education
- ⇒ Creating opportunities with the community to strengthen the skilled workforce pipeline



# Manufacturing Technologies Course Descriptions

## Manufacturing Technologies I

**Prerequisite:** None

**Description:** This course introduces students to the fundamentals of manufacturing technologies. Areas of emphasis include lab safety, print reading, measuring techniques, power systems, basic mechanical systems, and basic electricity. Students will gain experience in technical processes associated with metal, wood, and composites.

## Manufacturing Technologies II (Honors)

**Prerequisite:** Manufacturing Technologies I

**Description:** This course is a continuation of Manufacturing Technologies I. This course provides intermediate manufacturing technologies students the ability to further their skills and knowledge levels. Areas of emphasis include spatial reasoning, 3D modeling, additive/subtractive manufacturing processes, joining/fastening processes, and basic instrumentation principles. The appropriate use of technology and industry-standard equipment is an integral part of this course.

## Manufacturing Technologies III (Honors)

**Prerequisite:** Manufacturing Technologies II

**Description:** This course is a continuation of Manufacturing Technologies II. This course provides advanced manufacturing technologies students the ability to further their skills and knowledge levels. Areas of emphasis include product development, marketing, quality control, automation, and diagnostic/troubleshooting practices. The appropriate use of technology and industry-standard equipment is an integral part of this course. Upon successful completion of this course, students will have acquired entry-level skills for employment and be prepared for postsecondary education.

## Manufacturing Technologies Advanced Studies (AS)

**Prerequisite:** Manufacturing Technologies III

**Description:** This course is offered to students who have achieved all content standards in a program whose desire is to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

# Automotive Technology Course Descriptions

## Automotive Technology I

**Prerequisite:** None

**Description:** This course will introduce students to the operational and scientific nature of the automotive component systems including fuel, intake, exhaust, ignition, lubrication, braking, cooling, and suspension systems. Practical application of safe work habits and the correct use of tools and precision test instruments will be emphasized throughout the course

## Automotive Technology II (Honors)

**Prerequisite:** Automotive Technology I

**Description:** This course is a continuation of Automotive Service Technology I. This course provides intermediate automotive technology students with laboratory activities including tasks with advanced equipment to diagnose and service modern automotive systems. This course focuses on safety, engine repair, automatic transmission, manual transmission, manual drive train, drive axles, clutch systems, suspension and steering, heating and air conditioning, engine performance, braking systems, and basic electrical systems. The appropriate use of technology and industry-standard equipment is an integral part of this course.

## Automotive Technology III (Honors)

**Prerequisite:** Automotive Technology II

**Description:** This course is a continuation of Automotive Service Technology II. This course provides advanced automotive technology students with in-depth study and skill development in the repair of automotive engines, engine performance, machine operations, steering and suspension service, drive train service, and air conditioning system service. The appropriate use of technology and industry-standard equipment is an integral part of this course. Upon successful completion of this course, students will have acquired entry-level skills for employment and be prepared for postsecondary education.

## Automotive Technology Advanced Studies (AS)

**Prerequisite:** Automotive Technology III

**Description:** This course is offered to students who have achieved all content standards in a program whose desire is to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

# Automation Technology Course Descriptions



## Automation Technology I

**Prerequisite:** None

**Description:** This course introduces students to the fundamentals of automation technologies. Areas of emphasis include lab safety, print reading, measuring techniques, power systems, basic automation systems, and basic programmable logic controls.

## Automation Technology II (Honors)

**Prerequisite:** Automation Technology I

**Description:** This course is a continuation of Automation Technology I. This course provides intermediate automation technology students the ability to further their skills and knowledge levels. Areas of study focus on the integration of mechanical, electrical, hydraulic and robotic methods. The appropriate use of technology and industry-standard equipment is an integral part of this course.

## Automation Technology III (Honors)

**Prerequisite:** Automation Technology II

**Description:** This course is a continuation of Automation Technology II. This course provides advanced automation technology students with more in-depth skill development. Students will explore the use of robotics, programmable logic controllers, and the principles of automation and how they apply to multiple industries. The appropriate use of technology and industry-standard equipment is an integral part of this course. Upon successful completion of this course, students will have acquired entry-level skills for employment and be prepared for postsecondary education.

## Automation Technology Advanced Studies (AS)

**Prerequisite:** Automation Technology III

**Description:** This course is offered to students who have achieved all content standards in a program whose desire is to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

