

# INDUSTRIAL TECHNOLOGY DEPARTMENT Senior High School



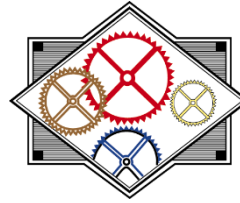
Arts &  
Communications



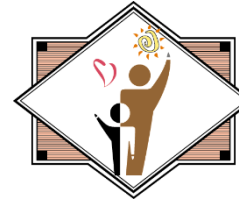
Business, Management  
Marketing & Technology



Health  
Science



Engineering/Manufacturing  
& Industrial Technology



Human  
Services



Natural Resources  
& Agriscience

VPAA – Meets Visual, Performing & Applied Arts Requirement

OLE – Meets Online Learning Experience Requirement

SMR – Senior Math Related

CP - CTE Completer

21F – Course Available through Section 21F: Expanded Virtual Learning

\*CAREER ZONES - Broad groupings of careers that share similar characteristics and whose employment requirements call for many common interests, strengths, and competencies.

**CONSTRUCTION BUILDING AND MAINTENANCE** (VPAA/SMR/CP) – V400 10, 11, 12 2.0 credits

SHARED TIME: May require travel to another building

This course is designed to provide insight and experience in the Construction trades industry. Residential construction is integrated with commercial construction techniques and materials. Students will participate in several aspects of the construction process. Upon successful completion of this program, students can qualify for paid internship training as well as articulated college credit.

Examples include:

- Safety
- Site layout
- Concrete
- Floor Framing
- Rough Frame
- Roofing
- Siding and windows
- Electrical
- Plumbing
- Insulation
- Drywall
- Painting
- Finish Carpentry

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**CTE WOODWORKING (VPAA) – V700** 9, 10, 11, 12 1.0 credit

SHARED TIME: May require travel to another building

This course is designed to safely teach students the basic skills in the use of woodworking/construction trades materials, tools and processes with multiple skill levels. Hand tools, portable power tools, and industrial woodworking machines will be used to develop and create prototypes.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**CTE FURNITURE AND CABINET CONSTRUCTION (VPAA/CP) – V710** 10, 11, 12 1.0 credit

SHARED TIME: May require travel to another building

PREREQUISITE: CTE Woodworking

This course is designed safely teach students the applications of wood technology, such as millwork and furniture construction. It focuses on the final aspects of building such as constructing kitchen cabinets, counters, and built-in units. Included is the study of joinery, frames, doors, drawers, finishes, and installations. Floor plans, blueprints, and exterior house design will also be examined as resources. Students will be exposed to career opportunities in the construction and woodworking trades.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**ADVANCED WOODWORKING (VPAA/CP) – V720** 10, 11, 12 1.0 credit

SHARED TIME: May require travel to another building

PREREQUISITE: CTE Woodworking

This course is designed for students interested in the woodworking field. Students design their own projects and/or explore other related areas of wood fabrication. Students can design, cost account, and construct prototypes in such areas as residential construction, cabinetmaking, furniture making, pattern making, millwork, or plastic laminates. Study guides, projects and exams will be used to evaluate progress.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**CTE WELDING II (VPAA/SMR/C) – V430** 11, 12 2.0 credits

Stevenson High School Only

PREREQUISITE: CTE Welding I

This course is designed to enhance the technical skills that are demanded in the welding industry. Students electing this class will advance their knowledge of welding codes, blueprint reading, welding symbols, and testing of welds (both destructive and non-destructive). Students will also become familiar with machine maintenance procedures. This program will teach the advanced techniques required to perform ARC, GAS, TIG, and MIG welding in all positions. Students will be required to design and fabricate a product of their choice to gain fabrication training. Successful completion of this course may qualify the student for articulated college credit.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**AUTO I** (VPAA/SMR) – V435 10, 11, 12 1.0 credit

SHARED TIME: May require travel to another building

This course integrates classroom theory and laboratory applications in order to develop in students the highly technical skills sought after in the automotive service and repair field. Students will gain competency in safety concepts, equipment operation, tool usage, and precision measurement. This course is designed to expose students to all phases of automotive maintenance and light repair. Auto 1 introduces the student to skills covered in all eight areas of ASE and State licensing. This is done through a series of ASE related tasks: demonstrations, observations, labs, and basic performance-based evaluations. Students are required to complete performance objectives, keep a notebook, and take exams to prepare for success in future automotive training programs. It is highly recommended that students follow this course with CTE Auto in order to obtain industry certification.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**CTE AUTO** (VPAA/OLE/SMR/CP) – V440 11, 12 2.0 credits

SHARED TIME: May require travel to another building

PREREQUISITE: Auto I

CTE Auto integrates classroom theory and laboratory applications in order to further develop the technical skills introduced in Auto I. Students are required to complete advanced performance objectives, keep a notebook, and take exams to prepare for success in future automotive training programs. Students will further their understanding of safety concepts, equipment operation, tool usage, and precision measurement. This advanced two-hour course focuses on the hands-on application of skills included in all eight areas of ASE and State of Michigan Certification. These eight areas include Engine Repair, Automatic Transmission/Transaxle, Manual Drivetrain and Axles, Steering and Suspension, Brakes, Electrical/Electronic Systems, Heating and Air Conditioning and Engine Performance. These eight areas are all encompassed in ASE's Maintenance and Light Repair Certification. All students enrolled in CTE auto are provided the opportunity to earn ASE Student Certification in MLR free of charge. The skills taught in this course are designed to prepare students for both entry level positions and more other post-secondary options. Upon successful completion of this program, the students can qualify for articulated college credit.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**SMALL ENGINE REPAIR I** (VPAA/SMR) – V485 9, 10, 11, 12 1.0 credit

SHARED TIME: May require travel to Henry Ford II High School

This is a comprehensive course for students interested in learning how to repair small internal combustion engines. Students are taught the use of basic hand tools, engine maintenance (both two and four-cycle), valve grinding, burnishing, theory of compression, carburetion, and magneto electrical system. Engine tear-down, rebuilding, and troubleshooting are done using industrial manuals as guides.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*

**CTE SMALL ENGINE REPAIR** (VPAA/SMR/CP) – V490 11, 12 2.0 credits

SHARED TIME: May require travel to Henry Ford II High School

PREREQUISITE: Small Engine Repair I

This course is designed to teach job entry skills in the repair of both two and four-stroke small engine equipment and recreational vehicles. The electronic electrical system is studied and compared to the magneto electrical system. Students are put in service-type situation where they are responsible for repair jobs from beginning to end. Students are required to complete performance objectives, keep a notebook and take exams. Upon successful completion of this program, the students can qualify for articulated college credit.

*\*Course content may address skills pertaining to these potential Career Zones: Engineering, Manufacturing & Industrial Technology*