

Industrial Technology Graduation Requirements

Class of 2006 needs 31 credits

Class of 2008 needs 29 credits

Class of 2007 needs 30 credits

Class of 2009 needs 28 credits

Required Class: Principles of Technology A/B

- 1505 Survey of Industrial Technology - (9-10)**
Students will explore several areas of industrial technology including communication, transportation, construction and manufacturing technology
In this class the students will:
- Demonstrate the ability to use common drafting equipment properly.
 - Demonstrate the ability to organize and implement a manufacturing production line- Model rockets.
 - Demonstrate the ability to design, build, and test a CO2 dragster using all appropriate tools and procedures.
 - Demonstrate the ability to read a ruler to a 1/16 of an inch.
 - Demonstrate the ability to read a metric ruler
- Accreditation Target Goal Components:**
Writing: Students will utilize Type 1 and 2 writing skills as they write ten short essays on topics related to the class.
Math: Students will demonstrate knowledge of fractions and metric measurement and apply it to classroom projects.
Career Development: Careers in the industrial technology field will be discussed. Students will write a one-page Type Three paper about an engineering field of their choice.
- 1508 CADD - (10-12) Computer Aided Drafting Design**
Designed to give the student computer aided design fundamentals and applications in Mechanical Drawing. Course work will include but not be limited to 2D/3D wire frame and solid modeling. This class is designed for 10th graders considering going to the MACC their junior and/or senior year to take Industrial Graphic Design and CADD (Computer Aided Design), or for students interested in a career in industrial design.
In this class the students will:
- Learn an overview of CADD operating systems.
 - Create, edit and manipulate geometry
 - Organize drawing objects on layers
 - Construct a 2-D – 3-D solid modeling drawings
 - Work on a reverse engineering drawing.
- Accreditation Target Goal Components:**
Writing: Students will utilize Type 1 and 2 writings.
Math: Students will use the English standard and metric measurement and apply it to their drawings.
Career Development: Students will explore careers in CADD-related fields and write a type three paper.

1510 **Wood Technology** - (9-12) Students will learn fundamentals of basic woodworking including: design, estimating cost of materials, and completing a project.

In this class the students will:

- Evaluate a selection of technological resources or systems to solve problems.
- Know and practice all safety rules when working in the shop with woodworking equipment.
- Correctly construct their own plans with dimensions, bill of materials, cost, and plan of procedure, for the project they will be building in class.
- Correctly identify the various types of common woods used in the shop.
- Satisfactorily complete chosen projects.

Accreditation Target Goal Components:

Writing: Students will utilize Type 1 and 2 writings as they complete three or more writings as they write nine short essays.

Math: Students will apply mathematics to properly estimate board feet and a bill of materials.

Career Development: Students will investigate careers in the industrial technology field and produce a Type 3 paper.

1511 **Advanced Wood Technology PT** - (10-12) Students will become familiar with design concepts, materials, hand and power tools so the student can complete woodworking projects. Emphasis on cabinet making.

In this class the students will:

- Complete assigned technology task demonstrating that a variety of technologies could be used to solve a problem.
- Know and practice all safety rules when working in the shop with woodworking equipment.
- Correctly construct their own plans with dimensions, bill of materials, cost, and plan of procedure, for the project they will be building in class.
- Correctly identify the various types of common woods used in the shop.
- Satisfactorily complete chosen projects.

Accreditation Target Goal Components:

Writing: Students will utilize Type 1 and 2 writings as they complete ten short essays.

Math: Students will apply mathematics to properly estimate board feet and a bill of materials.

Career Development: Students will investigate careers in the industrial technology field and produce a Type 3 paper.

1515 Metals/Welding Technology (10-12)

This class is designed for the student who is interested in or curious about metal welding and joining techniques and processes. Prior experience or knowledge about welding is an asset but not mandatory.

In this class students will:

- Read information to be used in classroom discussions.
- Follow all applicable safety standards.
- Demonstrate proper application of various welding processes
- Exercise their ability to problem solve.

Accreditation Target Goal Components

Writing: Students will be given several Type 1 and 2 writing assignments as well as various short answer essays.

Data Analysis: Material codes as well as data tables will be used and interpreted.

Technology: In the lab, various welding technologies will be used.

Post Secondary Options: Various careers connected to welding will be presented and discussed.

1516 Advanced Metals/ Welding Technology (11th or 12th) – PR: Metals/ Welding Technology, PT

This class is designed for the student who wishes to hone his or her welding skills as well as gain an in depth knowledge of specific welding processes and procedures. Prior welding background is expected.

In this class students will:

- read information to be used in the classroom as well as the lab.
- follow all applicable safety standards.
- demonstrate proper application of various welding processes.
- exercise their ability to problem and work as a team.
- be expected to be self-motivated.

Accreditation Target Goal Components

Writing: Students will be given several Type 1 and 2 writing assignments as well as various short answer essays.

Data Analysis: Material codes as well as data tables will be used and interpreted.

Technology: In the lab, various welding technologies will be used.

Post Secondary Options: Various careers connected to welding will be presented and discussed.

1520 Principles of Technology 1A (10th) – PR: Algebra I this class is required, however, the requirement will be waived for those who complete Physical Science A/B in 10th grade.

This class is designed to assist students in the understanding of matter and the use of various commercial / industrial materials.

In this class the students will:

- Gather information through reading, discussion, demonstrations as well as various types of classroom exercises.
- Manipulate data through the use of algebraic concepts.
- Demonstrate their ability to work in groups by completing given tasks.
- Be expected to follow all applicable safety standards.

Accreditation Target Goal Components

Writing: Students will write several Type 1 and 2 writing assignments, as well as various forms of essays.

Data Analysis: Many graphs and data tables will be used and interpreted.

Technology: The Internet will be used from time to time as a data source.

Post Secondary Options: A homogenous selection of careers will be presented and discussed

1521 Principles of Technology 2B (10th) – PR: Algebra I. This class is required, however, the requirement will be waived for those who complete Physical Science A/B in 10th grade.

The focus of this class is to assist students in gaining a practical understanding of various forms of energy such as electrical, thermal and wave, as well as hydraulic and mechanical forces.

In this class students will:

- Gather and synthesize information from books and other sources.
- Discuss synthesized information in class.
- Demonstrate their understanding of content through the writing of essays.
- Perform mathematical computations using basic algebra.

Accreditation Target Goal Components

Writing: Students will have several Type 1 and 2 writing assignments as well as numerous short and long type essays.

Data Analysis: Many charts, graphs and data tables will be used to interpret and process information.

Technology: The computers/internet may be used for supplemental information.

Post Secondary Options: Various careers will be discussed throughout the course.

1525 Applied Technology (11-12) – PR: Principles of Technology A/B or Physical Science A/B

Applied Technology is concerned primarily with explaining, understanding and the application of residential energy systems. The systems that will be examined will include electrical, plumbing and HVAC

In this class students will:

- Gather information through reading, discussion demonstrations as well as various classroom and lab activities.
- Demonstrate their ability to work in groups by completing given tasks.
- Be expected to follow all applicable safety practices.
- Manipulate data through the use of algebraic concepts.

Accreditation Target Goal Components

Writing: Students will write several Type 1 and 2 writing assignments, as well as various forms of essays.

Data Analysis: Many graphs and data tables will be used and interpreted.

Technology: The Internet will be used from time to time as a data source.

Post-Secondary Options: A homogeneous selection of careers will be presented and discussed.