

Engineering & Industrial Technology

Advanced Manufacturing (College Credit)

Course Description:

Intro to Advanced Manufacturing is a hands-on, lab-based, and project-based class where students will learn basic machining and metalworking skills. Students will apply the skills and knowledge of using modern manufacturing processes to obtain resources and change them into industrial materials, industrial products and consumer products. Intro to Adv Mfg includes additional online coursework in conjunction with Ivy Tech. Students have the opportunity to earn 6 college credits in Advanced Manufacturing. This class is recommended for grades 10-12.

Sample Activities:

Activities in this class involve making products through metal working projects, welding, lathe and mill work and online coursework and simulators.

Contact Teacher(s):

Mr. Beau Brandt, E109, beau.brandt@evsc.k12.in.us

Intro to Construction

Course Description:

Intro to Construction is an elective course, offering hands-on activities and real world experiences related to construction and home ownership **FOR ALL STUDENTS, GRADES 9-12**. Students will learn about safe tool use and maintenance related to construction, the history and traditions of construction trades, blueprint reading, and applied math.

Sample Activities:

- Woodworking Projects
- Building model and scaled structures
- Foundation/ Masonry
- Framing
- Drywall
- Roofing
- Plumbing
- Electrical

Contact Teacher(s):

Josh Dahmer, E103, Joshua.dahmer@evsc.k12.in.us

Intro to Design Processes

Course Description:

IDP is a hands-on, project oriented, entry level design class that teaches students basic design and tool skills. Activities vary with each class. This class includes a little from construction, manufacturing, transportation and communication classes. IDP is open to all students 9-12.

Sample Activities:

Activities students have done in this class are: sketching and CAD, making CO2 cars, woodworking, and metalworking and welding projects.

Contact Teacher(s):

Mr. Beau Brandt, E109, beau.brandt@evsc.k12.in.us

Intro to Engineering (IED) (College Credit)

Course Description:

This is the first class in the PLTW pre-engineering curriculum and **is THE ONLY COLLEGE CREDIT CLASS OPEN TO FRESHMAN AT NORTH HIGH SCHOOL.** Through hands-on projects and using 3D modeling software, students will learn how products are designed and innovated by engineers. Students will research and design solutions to given problems, model those solutions, and document their work. THIS CLASS IS OPEN TO ALL STUDENTS, GRADES 9-12, WHO HAVE PASSED OR ARE TAKING ALGEBRA 1.

Sample Activities:

- Designing and Producing a Puzzle Cube
- Computer Aided Design and Animation (CAD)
- Reverse Engineering a Product
- Innovating a Product
- Graphic Design
- Presentation Design and Delivery

Contact Teacher(s):

Eric Baird, D103, eric.baird@evsc.k12.in.us, 812-435-8283 EXT 42068

Intro to Manufacturing

Course Description:

Intro to Manufacturing is a hands-on, lab-based, and project-based class where students will learn basic machining and metalworking skills. Students will apply the skills and knowledge of using modern manufacturing processes to obtain resources and change them into industrial materials, industrial products and consumer products. This class is open to all students grades 9-12.

Sample Activities:

Activities in this class involve making products through metal working projects, welding, lathe and mill work.

Contact Teacher(s):

Mr. Beau Brandt, E109, beau.brandt@evsc.k12.in.us

*Intro to Transportation***Course Description:**

Introduction to Transportation is an introductory course designed to help students become familiar with fundamental principles in modes transportation, including basic mechanical skills and processes involved in transportation of people, cargo and goods. Students will gain and apply knowledge and skills in the safe application, design, production, and assessment of products, services, and systems as it relates to the transportation industries. Content of this course includes the study of how transportation impacts individuals, society, and the environment. This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant transportation related activities, problems, and settings.

Sample Activities:

- Small Engine Repair, Maintenance, Diagnosis, Tear-down, and Rebuilding
- Automotive Repair, Maintenance, Service and Diagnosis
- Routine Maintenance
- Service Brake Systems
- Performance Upgrades
- Suspension

Contact Teacher(s):

Josh Dahmer, E103, Joshua.dahmer@evsc.k12.in.us

*Principles of Engineering (POE) (College Credit)***Course Description:**

This is the second class in the PLTW pre-engineering curriculum. POE is a project based class in which students will learn how to use machines, robotics, material testing and fluid power devices to learn about applied science concepts related to advanced manufacturing and engineering careers. In short, students will make and break things to learn how they work. This class is open to any student who has already completed the Introduction to Engineering Design (IED) class with a C average or higher.

Sample Activities:

Typical projects include: multiple robotic machines, a compressed air cannon, an aluminum dog bone, a hydraulic arm model and various simulators.

Contact Teacher(s):

Eric Baird, D103, eric.baird@evsc.k12.in.us 812-435-8283 ext 42068