

CAREER & TECHNICAL EDUCATION

PROGRAMS @ THE ORMSBY CENTER (East Aurora)

AUTO BODY REPAIR

4 Credits **Length: ½ Day/40 Weeks/2 year program**

Instruction is given in non-structural and structural repair, refinishing, estimating, and mechanical and electrical repair. Students in this class acquire job related skills and techniques through the use of specialized tools and equipment in the auto collision repair field.

AUTOMOTIVE TECHNOLOGY

4 Credits **Length: ½ Day/40 Weeks/2 year program**

Instruction is given in non-structural and structural repair, refinishing, estimating, and mechanical and electrical repair. Students in this class acquire job related skills and techniques through the use of specialized tools and equipment in the auto collision repair field.

CONSTRUCTION TECHNOLOGY

4 Credits **Length: ½ Day/40 Weeks/2 year program**

Students receive an overview of the construction industry and learn the fundamentals of carpentry, wiring, plumbing, masonry, blueprint reading and estimating. This class is currently involved in an on-site farm house renovation at the Knox State Park.

COMPUTER ASSISTED DESIGN AND DRAFTING (CADD) / PRE - ENGINEERING

4 Credits **Length: ½ Day/40 Weeks/2 year program**

This program is for Mechanical, Architectural and Art/Design students who wish to explore graphic language. The first year focuses on forming a base knowledge of Architectural and Mechanical Technical Drawing with exploration in web design, art, animation and design. The second year is a continuation of technical drawing concepts with a focus on students exploring specific trade areas of art, design, web design and animation using two and three-dimensional media.

HEAVY EQUIPMENT OPERATIONS

4 Credits **Length: ½ Day/40 Weeks/2 year program**

Heavy Equipment Operations will prepare students to operate a variety of equipment under the guidance of an experienced instructor. This two-year program will follow the NCCER (National Center for Construction Education and Research) curriculum as well as locally developed enhancements. The program provides instruction on the operation, general maintenance, and safety specific to the heavy equipment operations field. The two year course will allow students to earn OSHA certifications as well as a NYSED technical endorsement. Students will experience lab time of approximately 1.5 hours per day. During lab time, students are engaged in hands-on learning activities with various forms of heavy equipment.

POWER EQUIPMENT

4 Credits **Length: ½ Day/40 Weeks/2 year program**

Students learn to perform engine overhauls, tune-ups and diagnosis. Drive line repairs include clutch, transmissions and differentials. Hydraulic and air brake system repairs are performed according to NYS Inspection Procedures. Gas, Arc, MIG and TIG welding are also taught in the program.

WELDING

4 Credits **Length: ½ Day/40 Weeks/2 year program**

The two-year Welding/Metal Fabrication Program enables students to develop specialized and sought-after skills for employment in the welding and metal fabrication industry. Students learn up-to-date welding and metal fabrication techniques and procedures in a variety of areas, such as electric arc or SMAW (stick) welding, metal inert gas (MIG) welding, tungsten inert gas (TIG) welding, oxy acetylene cutting and welding, flux-cored arc welding, and plasma arc cutting. Students also learn testing and inspection protocols, safety procedures and the appropriate use of safety/protective equipment. Further areas of study to support welding and metal fabrication include: blueprint reading, layout and joint design, and metallurgy. Students in this program develop the skills necessary to be successful in welding/metal fabrication occupations in sectors such as the oil and gas, manufacturing and transportation industries, and all branches of the military.

NEW VISIONS (MACHINIST)

4 Credits **Length: ½ Day/40 Weeks/2 year program**

The half-day program allows students to spend the morning working alongside machinists, technicians and engineers in various aspects/phases of production. The goal of the program is for students to develop a complete foundation of the precision manufacturing process, from design to fabrication. Together with regional partners including PCB Piezotronics, Inc., SUNY Erie and Niagara County Community College, New Visions will help prepare the workforce of the future — today.

FINE WOODWORKING (Cabinet)

1 Credits Length 40 weeks Prerequisite: Sophomore status or higher

A 1-unit course recognizing the dramatic changes that have occurred in the way wooden products are manufactured. Hands-on activities in the early part of the course will focus on skill building through a series of small projects. We will also explore the significance and procedures of the research and design process, applied to the production of carcass and face frame cabinets, the improvement of industrial processes, and the acquisition of new knowledge. The course involves the students in realistic, hands-on research, design and production. Brainstorming, library research, problem solving, modeling, prototype production, and other skills are developed. Students will leave the class with several of their own wooden projects.

FINE WOODWORKING (Table)

1 Credits Length 40 weeks Prerequisite: Sophomore status or higher

A 1-unit course recognizing the dramatic changes that have occurred in the way wooden products are manufactured. Hands-on activities in the early part of the course will focus on skill building through a series of small projects. We will also explore the significance and procedures of the research and design process, applied to the production of mortise and tenon table design and furniture goods, the improvement of industrial processes, and the acquisition of new knowledge. The course involves the students in realistic, hands-on research, design and production. Brainstorming, library research, problem solving, modeling, prototype production, and other skills are developed. Students will leave the class with several of their own wooden projects.

SMALL ENGINE

½ Credit Length 20 weeks Prerequisites: Sophomore status or higher

Students will be exposed to the basic workings of Briggs and Stratton small engines. Each student will have the chance to fully disassemble, reassemble and run two new Briggs and Stratton engines. Four stroke and two stroke theory will be examined under close detail as well as carburetion and the Venturi effect. Students will have several opportunities to experience the "hands on work" involved in the small motor industry

WELDING

½ Credit Length 20 weeks Prerequisites: Sophomore status or higher

Students will be taught the basics of welding and fabricating. Each student will be taught how to properly set up a MIG welder and will be given several opportunities to be engaged in a welding project. Students will be instructed on the basics of MIG welding and the proper joinery that is involved in quality welding. Students will also be taught proper techniques for cutting, bending and fabricating metal with a special focus on safety. Students are encouraged to bring in their own small projects as an extra assignment in this class.

INTRODUCTION TO ROBOTICS

½ Credit Length 20 weeks Prerequisites: Sophomore status or higher

Robotics is a lab-based course that uses a hands-on approach to introduce the basic concepts of robotics, focusing on the construction and programming of autonomous mobile robots. . Programming and building robots applies science, technology, engineering, art and math (STEAM) concepts. Course information will be tied to lab experiments; students will work in groups to build and test increasingly more complex mobile robots, culminating in an end-of-semester robot contest.

INTRODUCTION TO VIDEO GAME DESIGN AND DEVELOPMENT

½ Credit Length 20 weeks Prerequisites: Sophomore status or higher

Turn your passion for video games, art, or technology into a future career in the multi-billion-dollar video game industry. Students learn how to use popular game-development software to create engaging, interactive games in a variety of styles. After learning about game genres, students learn about all aspects of the game-design process. From there, it's on to a series of increasingly challenging hands-on projects that teach all the elements of successful game development. This course provides a solid foundation in the essentials of game design.

ARCHITECTURE

½ Credit Length 20 weeks Prerequisites: Sophomore status or higher

Architecture is a course designed to provide the student with a comprehensive overview of the field of architectural engineering. The course focuses on the design and planning of residential commercial structures. CAD software is utilized by the students to develop the required plans to construct their structures designed in class. Project planning, scale models, artistic rendering, and student presentations are integrated throughout the course

AEROSPACE

½ Credit Length 20 weeks Prerequisites: Sophomore status or higher

Aerospace is the study of the engineering discipline which develops new technologies for use in aviation, defense systems, and space exploration. The course explores the evolution of flight, flight fundamentals, navigation and control, aerospace materials, propulsion, space travel, ergonomics, remotely operated systems and related careers.