



November

## Careerline Tech Center

Careerline Tech Center (CTC), a service of the Ottawa Area Intermediate School District, is a technical training center that provides career education to high school juniors and seniors. Students have the opportunity to gain skills and/or prepare for post-secondary education in one of 25 programs. Programs are offered Monday through Friday and students attend for a half day either in the morning or afternoon.

Each year, CTC has an open house in the fall (typically October) and winter/spring (typically February) for parents and potential students to visit the programs and talk with instructors. In January or February, sophomores and juniors have the opportunity to visit three programs of their choosing, before selecting a program for the following school year.

Students at Zeeland receive elective credit for attending CTC, however, some programs allow students the opportunity to receive their 4<sup>th</sup> year math or visual/performing/applied art credit upon successful completion.

CTC also has articulation and direct credit agreements with a number of area colleges and universities. These agreements give students the opportunity to earn college credit through participation in CTC programs. Some of these credits do come at a cost.

Listed below is an overview of each program (descriptions taken from the Tech Center's website - <http://www.oaisd.org/ctc>).

### Agriscience

***Environmental & Agricultural Sciences*** – Students in the Environmental & Agricultural Sciences program work in the classroom and lab learning about the agriscience industry and technology changes which are improving agricultural products.

Areas of study include plant identification and nutrition, soil properties, hydroponics, landscape design, turf systems and ecosystems. Students will also have the opportunity to explore some areas in the veterinary sciences field.

### Arts and Communications

***Graphic Design*** – Graphic design is the art and skill of combining text, images, drawings and writing, and creatively adapting them to the needs of clients. It's a way to blend the skills of an artist with the communication needs of business and industry. Students learn the basic components of good design by exploring proper use of layout, color and typography for use in posters, advertisements, magazines, books, packaging, etc. The lab is outfitted with the very best professional imaging tools; photography, scanners, light tables, Wacom tablets, projectors, inkjet printers, and traditional art supplies. Apple laptops and iMacs along with industry standard professional software (Adobe Creative Suite CS6; Photoshop, InDesign and Illustrator) are used to create high quality, printed media. Throughout the year, students work on a variety of design projects including: magazine layouts, packaging, letterhead, business cards and poster which are assembled into a portfolio which students often use to get into a design college. All tools and equipment are furnished for the students.

**Media Communications** – The Media Communications class offers students the opportunity to learn a variety of skills in the communications field including photography, video production, and computer graphics. Successful students in this program will be those who are creative...who like to communicate ideas in a variety of ways.

Media Communications students use computers, scanners, printers, and cameras to capture, manipulate, and produce images and sound. The focus of this program is on production. Students are prepared to produce educational and promotional audio/visual materials for business, industry, and educational institutions.

**Printing/Graphic Arts** – In Printing/Graphic Arts, students learn by doing. Students learn the basics of the major printing processes from design through digital imaging to final printed product. Those entering the Printing program should be creative, have good problem-solving skills, and enjoy working with other people.

Students learn all aspects of running a print shop. Students will assemble and maintain a portfolio of their work which will be graded throughout the year. Work is divided, with time spent on the computers learning various software programs, and the lab where students operate the printing and digital copying equipment.

### **Business, Management, Marketing & Technology**

**Business Management** - Students will manage a successful business called Port 31. Emphasis is placed on building a professional portfolio that showcases management and leadership skills developed during the course. Students benefit from teaming with department members, collaborating on all areas of the business as a staff. Departments include: human resources, finance, product development, buying & inventory, sales, promotional events, advertising, digital marketing, visual merchandising, and public relations. This engaging and fast-paced work environment offers students hands on experience in running a business.

**Culinary & Pastry Arts** – In the Culinary & Pastry Arts program, students learn about the hospitality industry focusing on culinary and pastry arts. In culinary, students learn about food and beverage production, nutritional values of foods, proper cooking methods, and sanitation. In baking, students prepare various types of desserts and baked goods. In addition, there is a focus on travel and tourism, customer relations, business math, and finance. Emphasis is placed on sanitation and students can receive several industry certifications.

**Entrepreneurship and Global Business** – Students will have the opportunity to develop a business plan in an area of interest while managing a virtual global business as a class. The classroom is transformed into an office and the students become business executives. Developing a business plan, students take their ideas and turn them into a launch pad for becoming their own boss, working with local business partners, consultants, and mentors.

**PC & Network Technologies** – In PC & Network Technologies, students are exposed to a well-rounded information technology curriculum which will allow them to make educated career and life decisions. Students learn skills in PC hardware and operating systems; network topologies, protocols, and operating systems; and Internet technologies. Successful completion of the program will result in opportunities for program and industry certifications. A large emphasis is placed on curriculum vocabulary, industry standards/certification, college articulation, and multitasking.

**Web and Game Development** – Students can expect a fast, project-based environment for learning web, mobile, PC, and Xbox game development over two years in this program. Emphasis is placed on IT core, HTML5, game theory, game design, object-oriented programming, and project management fundamentals during year one, which creates a rich experience for students to take into college or industry-related employment. Second year students will choose from one of three specialty tracks:

- **Jr. Game Developer:** Xbox game development, 3D development, project management
- **Jr. Web Developer:** Web application development, customer based projects, project management
- **Server Administration:** Networking fundamentals; network design, implementation, management using Server 2012 and Ubuntu, project management, and security

## **Construction**

***Building Tech & Construction Management*** – Students taking Building Tech/Construction Management will obtain the skills, technical knowledge, and work habits necessary to succeed in the construction industry. Students put classroom knowledge to work through hands-on activities in the lab and at the project house. All aspects of the construction industry are studied including: blueprint reading, framing, roofing, siding, masonry, and basic carpentry skills.

Students learn to safely operate all equipment used and build the cabinets which will be placed in the project house. The project house is usually a large, contemporary home built within close proximity to the Tech Center. One house is built every two years. This is a two-year program and students completing the program will have had the opportunity to participate in the construction of a house.

Students learn about "green" building practices such as green roofing, insulation, renewable resources, solar panels, pellet mills and stoves, energy consumption audits, and wind power.

***Electrical/Alternative Energy*** – Students taking the Electrical/Alternative Energy program will learn about residential, commercial, and industrial electricity. They also learn about wind, solar, hydro-electric, and fuel cell power. Electrical theory, blueprint reading, conduit bending, wiring, and lighting are included in this class.

Students work in the classroom learning electrical theory and wiring. A good understanding of basic math principles is important as they are used often. Students gain hands-on experience in the lab where they learn to bend conduit, and install electrical outlets, fuse boxes, and light fixtures. Students also participate in the Tech Center project house where they wire the house for electricity. Students interested in pursuing a career in the electrical field can gain up to 1000 hours towards their electrical apprenticeship.

Students enrolled in Electrical/Alternative Energy will take the "Green Awareness" certification coursework and upon successful completion, will receive the "Green Awareness" certificate. Students will put their newly acquired skills to work by participating in the installation of the electrical systems at the Tech Center project house.

***Plumbing & Water Systems*** – Plumbing & Water Systems offers students an opportunity to explore the newest technology in the plumbing industry including geothermal, hydronic heating, tankless water heaters and rainwater harvesting. Students will also learn layout and design of irrigation systems and water purification systems. Students enrolled in Plumbing & Water Systems program will put their newly acquired skills to work as they participate in the installation of the plumbing and irrigation systems at the Tech Center project house.

## **Engineering/Manufacturing**

***Engineering Design & Machine Technologies*** – Engineering Design & Machine Technologies offers students the opportunity to work on conventional tool room (mills, lathes, surface grinders) equipment as well as the use of hand tools, precision measurement instruments (micrometers, indicators), and Computerized Machines (CNC). Blueprint reading, technical math and problem solving skills are emphasized throughout the program. Many entry level jobs are available through the engineering design & machine technologies class along with supervised work experiences.

***Mechatronics/Robotics*** - Electronics and mechanical components work together to make up complex systems from a car to a robot to automation lines. Mechatronic students learn to design, build, program, and troubleshoot electro-mechanical systems using the principles of mechanics, electronics and computer science. Students learn about electronics, robotics, equipment controls and sensors, programming, hydraulics/pneumatics, CAD/CAM, basic machining, and CNC. Mechatronics students will design and build vex robotic systems, an electric race car, and other projects.

**Welding** – Students taking Welding learn the basic methods of welding. Design, layout, cutting and fabricating of metals, and identification of properties of metals and alloys are also studied. In addition, students learn fluxcore arc welding and plasma arc cutting.

Students gain practical experience in the welding lab. First year students study oxyacetylene welding, cutting, and brazing, along with shielded metal arc welding in all positions. Second year students learn gas metal arc welding, gas tungsten arc welding, plasma arc cutting, fluxcore welding, and some blueprint and welding symbols.

### **Health Sciences**

**Certified Nurse Aide** - In this program, students will learn the information and skills necessary to become a Certified Nurse Aide (CNA). CNAs work in nursing homes, hospitals, and assisted living facilities. Students will learn how to document/report on patients, check vital signs, administer medications and/or treatments, apply dressings and bandages, and help keep patients clean. Upon completion of the CNA program, a national exam must be taken to receive certification.

**Dental Careers** – Dental Careers will prepare students to become chairside dental assistants upon completion of the program. The course also provides the opportunity for students to explore other careers in the dental field including dental hygienists, dental laboratory technicians, registered dental assistants, and dentists. In addition, this program offers dental x-ray certification for those students eighteen years of age or older.

Open to high school juniors and seniors, the class will provide concentrated work in the following areas: business office procedures and chairside dental assisting. Students who meet certain criteria during the course will have an opportunity to complete a 5-6 week, non-paid work experience with a local dentist.

**Emergency Medical Services** – Students will be prepared to respond to many emergencies that require urgent medical attention. This will be accomplished through the development and use of strong patient assessment and practical skills needed to appropriately manage the ill or injured patient. There are extensive clinical requirements that take place during school hours, after school, and on weekends. At a minimum, 8 hours are required in a hospital emergency room and 24 hours are required in an ambulance. After successful completion of the program, students will be eligible to take the National Registry Exam to become an Emergency Medical Technician (EMT-B).

**Healthcare Foundations** – Healthcare Foundations will prepare students in basic patient care. Students taking this class should be interested in providing healthcare services that can help identify, evaluate, prevent, and/or treat diseases. Students will learn how to take and record patient's temperature, blood pressure, and pulse and breathing rates, serve meals to patients who cannot feed themselves, walk patients, and the use of computers in healthcare. The course also includes specific hands-on exploration in the areas of medical assisting, health careers, physical and occupational therapy, and nursing.

Second year students may wish to study Advanced Healthcare, Emergency Medical Services or Dental Careers.

**Healthcare (Advanced)** – This program is for students who have completed the first year of Healthcare Foundations and builds on the skills learned. Emphasis is placed on three major areas of focus: academics and skill building, certification opportunities, and field placements. Students will study advanced skills such as EKG, catheters, dressing changes for wounds, and phlebotomy (drawing blood) and may choose to receive college credit. Certifications will be offered in phlebotomy, pharmacy tech, CPR/First aid, IC3, and OSHA. Putting skills into practice within the community, students will be placed in area doctors' offices and assisted living centers.

### **Human Services**

**Cosmetology** – Students taking Cosmetology should be interested in working as a licensed cosmetologist. In this program, students will receive the training required to take the State of Michigan license exam. All services

offered in a salon will be taught including hair shaping and styling, manicures, facials, waxing, and chemical services.

1500 total hours of education is required to be eligible to take the State of Michigan licensing exam. Students must be a senior to take this program. Classes are held at Tulip City Beauty College in Holland, Michigan. There is a fee to participate in this program.

**Public Safety & Security Services** – Students taking Public Safety & Security Services will be trained in the protection of life, liberty, and property. Students will be introduced to the role of law enforcement, public safety, and security services in our community. Michigan law will be studied as well as the court system, corrections, emergency procedures (including CPR and first aid), and investigative procedures.

Emphasis is placed on oral and written communication skills. The class will prepare students to work in private security, 911 dispatch and/or continue on for college training in law enforcement, corrections, and other support services.

**Teacher Academy** – In the Teacher Academy program, students will gain knowledge and skills as they study the four areas of child development, learn to make meaningful child observations, create developmentally appropriate lesson plans, learn guidance techniques, and set up an active learning environment. This program is for the high school student who wants to become a teacher.

## **Transportation**

**Auto Body Repair** – Students taking Auto Body Repair will discover how to repair damaged vehicles by learning dent removal, welding techniques, body and frame alignment, panel replacement, surface preparation, estimating skills, and painting.

Some students will work on customer cars. There is a lot of variety to the day as students learn all aspects of auto body repair. Some of the tasks include estimating the cost of a repair, pounding out small dents, welding metal parts, filing, grinding, sanding, and smoothing filled or repaired surfaces.

**Automotive Technology** – The Automotive Technology program gives students the opportunity to work on actual customer cars. Students learn to repair vehicles in the areas of tire service, tune-ups, electrical circuits, suspensions, brakes, and electronics.

Students put classroom knowledge to work by servicing customer cars which are brought into the auto mechanics lab. The jobs are varied with new problems and cars every day. Through classroom and lab experiences, students have the opportunity to take a number of tests to gain State of Michigan certifications.

**Diesel/Heavy Equipment Mechanics** – Students taking Diesel/Heavy Equipment Mechanics will study the operation, maintenance, and overhaul of diesel-powered equipment while specializing in heavy equipment, trucking, and automotive applications. Electrical theory and components are also studied.

Students work in the classroom learning about the various diesel engines and components. The lab provides students with the opportunity to get hands-on experience with diesel engines. Each student will complete at least one engine overhaul during the school year.

**For more information about any of the above programs, or general questions about the Tech Center, you are welcome to call 1-877-702-8601, ext. 4512, e-mail Kristin Bunn at [kbunn@oaisd.org](mailto:kbunn@oaisd.org), or visit their website at <http://www.oaisd.org/etc>.**