



Counselors Guide To CTE

2022-2023

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**CAREER TECHNICAL
EDUCATION CONSORTIUM (DCTC)/CTE**

Downriver Career Technical Consortium (DCTC) serves the school districts of Airport, Flat Rock, Gibraltar, Grosse Ile, Huron, Riverview, Southgate, Trenton and Woodhaven-Brownstown. The DCTC offers a program where local districts share their technical and academic programs, as well as work-based learning opportunities. Students interested may participate at the beginning of their junior year and continue into their senior year.

DCTC combines occupational and academic learning so that students will have the capacity to grow and change in the workplace. The technician is a professional who understands and can apply underlying principles to a broad base of problems. A student pursuing a career in technology must have a mathematical, science, and computer background. The technical student must also be able to read and comprehend, communicate orally and in written form, follow directions, problem solve, and work individually as well as in a team.

DCTC offers a course of study for technical careers, blending academics and technical competencies, and it is a way to earn college credit in high school. Upon completion of DCTC classes at the high school level, the student may have earned college credit at some of the local colleges such as, Henry Ford College, Monroe County Community College or Wayne County Community College District. The student may continue his/her education to gain an Associate Degree with the DCTC course experience.

DCTC SCHOOLS

Airport	734-654-6208
Flat Rock	734-535-6600
Gibraltar/Carlson	734-379-7100
Grosse Ile	734-362-2400
Huron	734-782-5360
Riverview	734-285-7366
Southgate	734-246-4617
Trenton	734-692-4536
Woodhaven	734-789-2069

To view all DCTC/CTE courses, go to: https://www.dctcschools.org/program_info

DCTC/CTE ACADEMIC CONSORTIUM

The Downriver Career Technical Consortium has established the Academic Consortium for students in the nine school districts of Airport, Flat Rock, Gibraltar/Carlson, Grosse Ile, Huron, Riverview, Southgate, Trenton, and Woodhaven. The purpose of the Academic Consortium is to provide expanded opportunities in high level courses. Juniors and seniors from the nine high schools are eligible to attend classes within the Academic Consortium.

Students who are interested in taking high level classes at another high school should discuss their interest with their high school counselor. After approval of the building principal, the counselor will contact the other high school counselor and building principal to see if space is available for a particular course and whether a schedule can be worked out.

The purpose of the Academic Consortium is to provide students with access to unique and/or high-level classes that are not offered at their high school.

TRANSFER CLASSES Downriver Career Technical Consortium (DCTC)

Agriscience I & II (Zoology & Botany)

Grade 11 - 12

Location: Airport HS

This course will focus on plant parts, function, use, classification and specific forms of plant production. Practical applications in forestry, landscaping, greenhouse production, pesticides, conservation and crop production will illustrate the need and use for plants in our society and environment. Major natural resource topics of study include: wildlife, forestry, soil, air, water, minerals and energy sources. This course will make students aware of career opportunities in the areas of plant science and production, natural resources and conservation. Agricultural business and marketing will also be explored.

Future Farmers of America (FFA) participation is mandatory and course has been designed for those students who want a true Agriscience experience. FFA participation will develop leadership, cooperation, career, and personal skills which are vital in today's world.

Agriscience III (Zoology & Botany) - Work -based Learning

Grade 12

Location: Airport HS

Prerequisite: Successful completion of Agriscience I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing Agriscience as a career path and has successfully completed Agriscience I and II. Students in this class should have a placement in an approved agriscience business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Agriscience III class one day per week to be determined by the instructor.

Architectural Drafting and CAD I and II

Grades 11 - 12

Location: Airport HS

The course serves as a solid foundation course for all students, especially for students interested in the engineering field. The course time is split between manual drawing and AutoCAD. It is designed to introduce drafting students to computer-aided drafting and design. Students learn to use professional tools and a variety of the latest professional computer-aided design (CAD) software applications to create two-dimensional and parametric 3D building information model (BIM) floor plans, elevations, foundation plans, site plans, pictorials, sections, and details. Students learn to use a variety of measuring and dimensioning paradigms and tools for architecture, civil engineering, and surveying. Students design and produce 3D objects using 3D printers. Students produce full-size 24x36 drawing sets. The curriculum includes drawing fundamentals, architectural drawing, project planning, site planning, structural systems, building systems, schedules and documentation, working drawings, codes and specification, presentations, building materials, sustainability, and leadership. The students compete in a residential house design competition and collaborate to design a residential house for a community member. Students can earn one or more certified CAD user credentials.

Automotive Technology I

Grades 11-12

Location: Airport HS
Huron HS
Trenton HS

This class is designed for the student who is considering automotive technology as a career path. This is the first in a series of two classes that spend a great deal of time working on tasks that will help toward that student becoming ASE certified after they have completed school. ASE requires two years of paid industry work experience for certification, and the skills students learn here will help them get that first job in the field. All areas of ASE certifiable repair will be discussed with emphasis on electrical and steering/suspension. Fifty percent of the class will be held in the lab and students will be expected to work on a daily basis. The remainder of the class will be held in the classroom, and students will continue to learn the theory and operation of more complex parts and systems. Students will be expected to wear proper attire in the shop, follow all safety rules, and participate in hands on work.

Automotive Technology II

Grades 11 -12

Location: Airport HS
Huron HS
Trenton HS

Prerequisite: Automotive Service Technology I

This class is designed for the student who has chosen automotive technology as a career path. This is the second in a series of two classes that spend a great deal of time working on tasks that will help toward that student becoming ASE certified after they have completed school. ASE requires two years of paid industry work experience for certification, and the skills students learn here will help them get that first job in the field. All areas of ASE certifiable repair will be discussed with emphasis on electrical and steering/suspension. The best way to learn to diagnose and repair cars and light trucks is with repetition. Students will continue to practice and master the skills they began to work with in Automotive Service Technology II. Most of the class will be held in the lab and students will be expected to work on a daily basis. The remainder of the class will be held in the classroom, and students will continue to learn the theory and operation of the most complex parts and systems. Students will be expected to wear proper attire in the shop, follow all safety rules, and participate in hands on work.

Automotive Technology III - Work-based Learning

Grade 12

Location: Airport HS
Huron HS
Trenton HS

Prerequisite: Successful completion of Auto Technology I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing automotive technology as a career path and has successfully completed Auto Technology I and II. Students in this class should have a placement in an approved auto technology business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Auto Technology III class one day per week to be determined by the instructor.

Auto Body Collision Repair I - NATEF Certified

Grade 11

Location: Huron HS

Prerequisite: Metal/woods class if available, and instructor and counselor approval

Students will receive a thorough understanding of the auto collision trades, its working conditions, and requirements. Special emphasis will be placed on promoting a strong grasp of what it means to be a professional technician employed in the auto collision repair trade. Topics covered include:

- General shop safety
- Personal safety in the body shop
- Demonstrating lift equipment
- Identifying auto body parts
- General hand tools
- Oxyacetylene safety and set up
- Oxyacetylene flame cutting
- Body repair hand and power tools
- Body fillers and abrasives
- R & R Bolt-on components
- MIG welding safety and set-up
- Fiberglass repair
- Repairing automotive plastics
- Plasma cutting

Auto Body Collision Repair II - NATEF Certified

Grade 12

Location: Huron HS

Prerequisite: Grade of "C" or better in Auto Collision Repair I, and instructor and counselor approval

When a student returns to the Auto Collision program, the assumption is made that he or she is very serious about entering the auto body trade as a career. It is, therefore, extremely important that these students work especially hard to gain the skills that will make them competitive.

All returning students must review and pass all safety tests. Second-year students will receive training in the basics of refinishing automobiles. Topics covered include:

- Paint product and application safety
- Performing hands-on duties
- Sanding auto body parts
- Types of spray guns
- Types of undercoats
- Masking auto body parts
- Identifying paint codes
- Types of rubbing compounds
- Prepping new parts for finishing
- Refinishing with urethanes
- Refinishing non-metal flexible parts
- Mixing with intermix paint system
- Spray booth orientation
- Paint Systems
- Clear coat systems

Auto Body Collision Repair III - NATEF Certified - Work-based Learning

Grade 12

Location: Huron HS

Prerequisite: Successful completion of Auto Body Collision Repair I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing automotive collision repair as a career path and has successfully completed Auto Body Collision Repair I and II. Students in this class should have a placement in an approved auto body collision repair business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Auto Body Collision Repair III class one day per week to be determined by the instructor.

Aviation Technology I - FAA Accredited

Grade 11

Location: MIAT (Michigan Institute of Aviation Technology) College of Technology in Canton
WCCCD Downriver Campus

Prerequisite: Counselor approval. Algebra and/or related math are required. Good attendance and overall grades are examined. Students must be interviewed by MIAT personnel who will determine admission. Students must provide their own transportation.

Special note: The FAA regulates this program. Perfect attendance is required. Any missed time must be made up either on weekends, holidays, or after school. The FAA also requires a stricter grading scale. Any grade below 70% is failing.

This program prepares students to apply technical knowledge and skills to repair, service, and maintain all types of aircraft power plant and related systems. Instruction includes engine inspection and maintenance; lubrication and cooling; electrical and ignition systems; carburetion; fuels and fuel systems; and propeller and fan assemblies. Upon completion of Aviation Technology I and Aviation Technology II, the student is prepared and eligible to apply for licensing by the FAA as either an Airframe or Power Plant Technician.

Aviation Technology II - FAA Accredited

Grade 12

Location: MIAT (Michigan Institute of Aviation Technology) College of Technology in Canton

Prerequisite: Aviation Technology I and instructor and counselor approval

In this course, students advance their understanding of aircraft engines. Most of the time spent on campus is in the lab (aircraft hangar) where students diagnose, trouble shoot, repair, and run piston and turbine aircraft engines. Completion of this year satisfies the FAA clock-hour requirement to test for the FAA power plant certificate.

Avionics Technology I - FAA Accredited

Grade 11

Location: MIAT (Michigan Institute of Aviation Technology) College of Technology in Canton

Prerequisite: Counselor approval. Algebra and/or related math are required. Good attendance and overall grades are examined. Students must be interviewed by MIAT personnel who will determine admission. Students must provide their own transportation to this program located at Willow Run Airport in Belleville.

Special note: The FAA regulates this program. Perfect attendance is required. Any missed time must be made up either on weekends, holidays, or after school. The FAA also requires a stricter grading scale. Any grade below 70% is failing.

Students gain the fundamental knowledge to begin their aviation career. The year is spent in classroom and lab activities learning basic aircraft history, aircraft weight and balance, fluid lines and fittings, electronics, and much more. Students learn a solid foundation to continue in the second year.

Avionics Technology II - FAA Accredited

Grade 12

Location: MIAT (Michigan Institute of Aviation Technology) College of Technology in Canton

Prerequisite: Avionics Technology I and instructor and counselor approval

This program prepares students to technical knowledge and skills to repair, service and maintain electronics aboard an aircraft as well as the wiring that connects to the electrical system. Through the close coordination of power plant and electronics curriculum, the student is prepared to enter aviation and non-aviation industry at an entry level. Upon completion of Avionics I and Avionics II, the student is prepared and eligible to apply for licensing by the FAA as a certified Powerplant Technician.

Cabinetry & Woodworking

Grades 11 -12

Location: Trenton HS

This woodworking program is designed to acquaint students with the sources, uses, and limitations of wood products, and to learn how humans have applied modern technology to this basic natural material to mold it to meet their needs. This program includes laboratory experiences with an emphasis on correct usage and personal safety while using both hands and power equipment focusing on selecting materials. The students will progressively gain knowledge in the use of hand tools, portable tools, the table saw and router.

Topics include wood technology and joinery as it pertains to panel construction in freestanding furniture casework. Focus is on the design and fabrication of a solid wood casework featuring a door, drawer and mortise and technology joinery, and the utilization of modern cabinetmaking equipment. Additionally, students will also learn about machine anatomy, set up, and fundamental operations. Students will demonstrate their skills of the design and fabrication of a solid wood table using leg and apron construction including a drawer.

This program is one of the most advanced woodworking labs in Michigan. Students also will learn about wood processing, the physical properties of wood, and career opportunities in the forest products industry.

Location: Trenton HS

Prerequisite: Successful completion of year one of Cabinetry/Woodworking and permission of instructor

This course provides entry-level and upgrade training in kitchen cabinet/furniture construction and provides students with a broad-based set of skills that is required by the wood products manufacturing industry and that is directly transferable to the manufacturing sector in general. Students are introduced to the valuable skills necessary for entry-level employment or enter post-secondary wood programs. The program also includes state of the art cabinetmaking equipment where students will learn how to operate machines to perform the necessary tasks safely and efficiently with a high degree of quality. This course stresses safety as the number one requirement to proper machine operation. The student is provided with entry-level and upgrade training in cabinet and furniture construction skills for making traditional face frame and European (32 mm) cabinet systems. This course includes cabinet analysis and design with the development of process route sheets, estimating, and bill of materials commonly used in modern industry. Special emphasis is placed on specifications of state-of-the-art woodworking machinery, theory, and lab machine safety.

Students are expected to perfect and hone woodworking skills. Students will have laboratory experience using high performance woodworking machines. Emphasis will be placed on the student becoming more qualified to make individual machine set-ups, and produce high quality work accurately and efficiently. It is intended that this program will better prepare students for direct entry into the wood products industry after graduation or for a smooth transition to post-secondary education and training programs. The mandate of this program is to ensure that students are knowledgeable about the wood industry and the exciting, high growth potential careers it offers.

Computer Information Technology I and II

Grades 11 - 12

Location: Airport HS

Note: This is a two-year Dual Enrollment Program offered through Schoolcraft Community College, supported by DCTC and Airport High School

This is a two-year program which consists of a sequence of courses that prepares the student for entry-level positions supporting users of microcomputer components of the operating system. During the first year, students take Introduction to Computer Based Systems and Software Applications, Microsoft Windows, Introduction to Programming Logic, and Visual Basic Net. During these courses, students will explore the features of the latest desktop operating systems, learn the fundamentals of program logic, and design as well as acquire the knowledge and skills to develop applications in Microsoft Visual Basic Net for the Microsoft Net platform.

During the second year, students take additional IT courses; Database Management Systems and Introduction to Networking. These courses cover in depth Microsoft Access, provide a solid instruction to networking fundamentals, and prepare students for direct entry into the IT industry after graduation or for a solid foundation for additional training.

Construction Trades I & II

Grades 11 -12

Locations: Gibraltar Carlson HS
Southgate Anderson HS

Prerequisite: Students should have a good math foundation and be comfortable using math and measurements extensively. Counselor and instructor approval is required for admittance to Construction Trades I. A grade of "C" or better in Construction Trades I and instructor approval is required for Construction Trades II.

This two-year class is designed to give the student in-depth instruction in problem solving, critical thinking, safety procedures and various construction skills. The following topics will be covered:

- Proper usage and identification of tools in all areas
- Safety procedures/OSHA
- Residential and industrial blueprint reading
- Blueprint drawing and interpretation
- Applied math

Specific areas of construction that will be covered include:

- Electrical - basic house wiring, electrical codes, proper terminology, electrical symbol identification, identifying a series/parallel circuit, fixing electrical equipment, and conduit bending
- Plumbing - welding and cutting with a torch, sweat soldering/brazing, basic pneumatics, basic refrigeration, basic heating, plumbing codes, plumbing symbols identification, and drawing
- Carpentry - inspection of material, drywall techniques, nailing techniques, and miter box use
- Masonry - mixing concrete and mortar, construct cinder block wall, and calculating measurement of concrete to be used
- Painting - preparing different surfaces, use of different paint types, proper cleaning of equipment, applying stains

Construction Trades III - Work-based Learning

Grade 12

Locations: Gibraltar Carlson HS
Southgate Anderson HS

Prerequisite: Successful completion of Construction Trades I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing construction trades as a career path and has successfully completed Construction Trades I and II. Students in this class should have a placement in an approved construction business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Construction Trades III class one day per week to be determined by the instructor.

Cosmetology I & II

Grades 11 - 12

Location: Riverview School of Cosmetology

Prerequisite: Students must complete an application process that will determine admission. Good attendance and overall grades are examined.

Students may be able to access transportation to their program when the DCTC bus hub is operating. Students are required to provide their own transportation from the Riverview School of Cosmetology and when the bus hub is not operating.

This two-year program prepares students for the field of cosmetology with study and hands-on experience under the direction of licensed hair-care professionals. It needs to be understood that the program requires a solid commitment and long hours. The students are expected to earn the state required hours in the field of cosmetology. One accepted into the program, students are trained by licensed cosmetology educators in a hands-on environment conducive with salon reality.

Due to the state requirements, this program demands excellent attendance, strong commitment, and some monetary funding from both student and parent/guardian. The schedule is subject to change and may include the summer months and Saturday attendance. The program is structured based on state requirements. The first 350 hours will cover the basics of cosmetology. After 350 hours, the students will be able to work hands on with real guests while they continue to complete their required 1500 hours.

The successful program completer will have the necessary skills and training to sit for the State of Michigan Cosmetology licensing examination.

Criminal Justice I & II

Grades 11 - 12

Location: Trenton HS

Note: This is a two-year Dual Enrollment Program offered through Wayne County Community College

Overview of criminal justice system, including historical development, present status, and suggested reforms. Includes detailed descriptions of the duties and functions of actors in the criminal justice system, including: victim, offender, police, prosecuting and defense attorneys, courts and corrections. Will elaborate criminal justice processes from the formation of laws to the final stages of the treatment of criminals, including a section on juvenile offenders. Finally, we cover the current issues in criminal justice including and review of cyber-crime and terrorism.

Second year of two-year program. This program prepares students for the criminal justice system. Law enforcement officers protect lives and property. Detectives and criminal investigators gather facts and collect evidence of possible crimes. Law enforcement officers' duties depend on the size and type of their organization. This program is designed to provide the academic and professional training necessary for careers in these fields.

Culinary Arts I

Grade 11

Location: Riverview HS

Prerequisite: Students must write and submit an essay about their interest in the culinary program and must attend an orientation with a parent or guardian. Counselor approval.

Culinary Arts I students focus on skills employers are looking for in the culinary industry, which include lodging, food service, and travel. First year students also spend a portion of classroom time in food preparation and maintenance of the kitchen, as the program provides lunch for the student body and staff at Riverview High School.

Culinary Arts II

Grade 12

Location: Riverview HS

Prerequisite: Successful completion of Culinary Arts I and Instructor and counselor approval

Culinary Arts II students focus on learning higher-level core culinary skills, as this is the base needed for entering this career. The advanced curriculum matches a higher percentage of student interests. Second-year students not only increase technical skills in cooking, but also hone leadership and teamwork skills as they work in the kitchen daily. All students are exposed to industry settings as students participate at various catered events throughout the year. Guest demonstrations, guest speakers, guest judging for competitions, field trips, internship programs, college visits, and college recruiters all provide for a broader learning experience. Students who are considering a career in the culinary industry and wish to begin making the opportunities happen today should take this course!

Culinary Arts III - Work-based Learning

Grade 12

Location: Riverview HS

Prerequisite: Successful completion of Culinary Arts I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing culinary as a career path and has successfully completed Culinary Arts I and II. Students in this class should have a placement in an approved culinary arts business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Culinary Arts III class one day per week to be determined by the instructor.

Cybersecurity I & II

Grades 11 - 12

Location: Henry Ford College MTech Campus

Note: This is a two-year Dual Enrollment Program offered through Henry Ford College, supported by DCTC and Carlson High School

Students will earn up to 28 college credits in the program. Students are required to follow the Henry Ford College schedule for classes. Transportation for the first year is provided from a participating DCTC school to HFC. Second year students are required to provide their own transportation.

This course offers a mid-level understanding of the technological needs, threats, and vulnerabilities of hardware, software, operating systems, networks and the internet. Students will examine operating systems, networks, tools and protocols needed to navigate, use, and manage security technologies as well as gain insight into the legal, social, and political dynamics of the cyber universe. Designed for students who are interested in cyber defense.

Dental Science I

Grade 11

Location: Woodhaven HS

Prerequisite: Biology, speech, and computer experience is suggested. Approval of counselor and instructor required.

This course is designed for students who are interested in pursuing a career in some area of dentistry. Students will explore different dental occupations such as dental assisting, dental hygiene, dental laboratory technician, dentistry, dental sales, chair-side dental assisting, and dental office administrative procedures.

The entry level position a student could obtain after completion of the course sequence would be in dental assisting or dental office administrative assisting. The student will receive knowledge of dental instruments, work with dental materials, and carry out selected dental laboratory work. A unit of OSHA standards for infection control procedures and OSHA blood borne pathogens standards will be taught. Advanced placement credit through Wayne County Community College District is possible. Students will be encouraged to participate in HOSA, a student organization in Health Sciences.

Dental Science II

Grade 12

Location: Woodhaven HS

Prerequisite: Successful completion of Dental Science I and Instructor approval

This course will be a continuation of Dental Science I. Training will concentrate on radiography techniques, administrative dental office skills, dental specialties, and laboratory procedures. A unit that is substantially equivalent to an American Dental Association accredited course in radiography will be taught. The student will identify anatomical structures associated with dental radiography, process dental radiographs, and practice safety precautions when working with dental radiography equipment. The unit on dental office administrative assisting includes using a computer to process patient business and insurance forms. A unit on dental office emergencies will offer the student a chance to obtain a CPR card. Advanced placement credit through Wayne County Community College District is possible. Students will be encouraged to participate in HOSA, a student organization in Health Sciences.

Dental Science III - Work-based Learning

Grade 12

Location: Woodhaven HS

Prerequisite: Successful completion of Dental Occupations I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing as area of dentistry as a career path and has successfully completed Dental Science I and II. Students in this class should have a placement in an approved dental business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Dental Science III class one day per week to be determined by the instructor.

Digital Multimedia/Radio & TV I & II

Grades 11 - 12

Locations: Gibraltar Carlson HS
Trenton HS

This program is a study of techniques and styles in television production with an emphasis on digital cameras and digital editing. Students will do projects such as a mini movie as a group and individually. DVD creation and Adobe Photoshop will be introduced. Quizzes and tests will be given throughout. Students should be able to shoot and edit at an intermediate level by the end of the program. The objectives are to learn I-Movie and Final Cut Pro software and professional video shooting techniques. Assessment is based on projects, tests, and quizzes. Students should have an entry-level understanding of computers. Students will be required to have interaction on camera and behind the camera, and they will also need to purchase media for class purposes.

The advanced level of the program is a study of advanced techniques and styles in television production with an emphasis on digital cameras and digital editing. Students will continue to do projects such as a mini movie as a group and individually. Quizzes and tests will be given throughout the second year as well. Students should be able to shoot and edit videos at an advanced level by the end of this program and will be required to show strong editing and shooting skills. A certificate of completion will be awarded at the end of this program. The objectives of the program is to master Final Cut Pro software and professional video shooting techniques. Assessment is based on projects, tests, and quizzes. Students should have a good understanding of computers. Students will be required to have a number of interactions on camera and behind the camera and they will also need to purchase media for class purposes.

Digital Multimedia/Radio & TV III - Work-based Learning

Grade 12

Locations: Gibraltar Carlson HS
Trenton HS

Prerequisite: Successful completion of Digital Multimedia/Radio & TV I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing as area of digital multimedia as a career path and has successfully completed Digital Multimedia/Radio & TV I and II. Students in this class should have a placement in an approved dental business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Digital Multimedia/Radio & TV III class one day per week to be determined by the instructor.

Educational Careers I & II

Grades 11 - 12

Location: Grosse Ile HS

The first-year course introduces the unique characteristics of the child, develops respect for children, and guidance skills that help them grow and develop. The student will gain knowledge that enables him/her to decide whether working in the field of education is a suitable, personal career goal; develop and show responsibility in work performance; learn how to study the growth and development of children; recognize the physical, social, emotional, and intellectual abilities and needs of children; understand how children learn, and the importance of play in their development; learn how parents and teachers influence the growth and development of the child; classroom management; and about technology in education. The student will gain this knowledge through classroom work and field placement experiences in a preschool and elementary setting.

The second-year course will introduce the unique characteristics of the teaching field through lesson planning, job shadow observations, and field placement experiences. The student will continue to learn about the field of education through observation and field experience

Educational Careers III - Work-based Learning

Grade 12

Location: Grosse Ile HS

Prerequisite: Successful completion of Educational Careers I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing an educational career as a career path and has successfully completed Educational Careers I and II. Students in this class should have a placement in an approved education or child care facility. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Educational Careers III class one day per week to be determined by the instructor.

Electrical Engineering Technology I and II

Grades 11 - 12

Location: Henry Ford College Campus

Note: This is a two-year Dual Enrollment Program offered through Henry Ford College, supported by DCTC and Grosse Ile High School.

Prerequisite: Completed application from DCTC website

Students will earn approximately 25 college credits in the program. Students are required to follow the Henry Ford College schedule for classes. Transportation for the first year is provided from a participating DCTC school to HFC. Second year students are required to provide their own transportation.

Electrical Engineering Technology is a two-year course that combines both principles and skills from electrical and electronics used in our modern world. Through a combination of classroom and intense laboratory exposure, students are prepared for entry into a range of career opportunities in manufacturing, healthcare, telecommunications, and many other electrical and electronics-related careers.

The program covers the basic principles of electricity and proceeds to the concepts of solid state components such as diodes, transistors, integrated circuits, and microprocessor systems. Advanced courses show how these fundamental principles are applied to machine control, computers, power supplies, amplifiers, oscillators, industrial control, and instrumentation systems. Courses simulate actual working conditions in fully-equipped laboratories where students put electrical-electronics theory into practice. Along with laboratory experiences setting up circuits, troubleshooting, and calibrating systems, computer-simulated circuit analysis is used in the majority of the courses. Successful completers of the program will receive an electrical engineering technology Certificate. This may then be used either for job placement or to further their education at either Henry Ford in the completion of their Associates degree in one year or to transfer to another college.

Engineering Design I and II

Grades 11 -12

Location: Airport HS
Flat Rock HS

This is a two-hour course in three-dimensional, feature-based parametric solid CAD. In this course the student will create complex three-dimensional parametric models and then generate two-dimensional views from those CAD models. Single parts and assemblies are developed, constrained, and manipulated in the modeling process. The application of dimensions, tolerances, and the creation of advanced views will be learned in the drafting environment. Instruction in surfacing will include extruding and the creation of simple and complex surfaces in the Generative Shape Design Work Bench. Students will submit projects to the MITES (Michigan Industrial and Technology Education Society) competition.

Graphic Communications I

Grade 11

Location: Southgate Anderson HS
Trenton HS
Woodhaven HS

Prerequisite: Counselor and instructor approval

Graphic Communications I is a computer intensive, project-based, hands-on course. Students are introduced to the tools and technologies used to create digital/print media. Digital Media includes images, multimedia, video, audio, animation, and the internet including website development. Students take on the role of media producer instead of that of media consumer. Students learn how print media is designed and produced. What is print media? Print media is anything with an image on it: posters, covers, business cards, T-shirts, mouse pads, and a million other things. Students learn about each stage of the print/digital media process and then begin to use the tools studied to complete various print/digital projects and assignments, such as the Screen and Offset printing processes and digital imaging. Educational and career opportunities in Graphic Communications are explored throughout the year.

Graphic Communications II

Grade 12

Location: Southgate Anderson HS
Trenton HS
Woodhaven HS

Prerequisite: Instructor or counselor approval

This is a self-directed, hands-on class in which students learn how to produce real products for real people in a "real-world" setting. This "real-world" setting is where problem-solving skills, reading, and writing get put to good use. Students will learn advanced techniques building upon skills developed in Graphic Communications I. Utilizing the program's equipment and software applications for creating and manipulating images, and the lab's process screen printing, offset printing, animation, and website development tools enables students to reproduce these images onto various materials and products. They will apply these advanced concepts into the completion of their individual and class projects. Educational and career opportunities are explored.

Graphic Communications III - Work-based Learning

Grade 12

Location: Southgate Anderson HS
Trenton HS
Woodhaven HS

Prerequisite: Successful completion of Graphic Communications I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing graphic communications as a career path and has successfully completed Graphic Communications I and II. Students in this class should have a placement in an approved graphic communications business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Graphic Communications III class one day per week to be determined by the instructor.

Health Sciences I

Grade 11

Location: Flat Rock HS
Grosse Ile HS
Wyandotte HS

Prerequisites: A "C" or better in Algebra I and a "C" or better in Biology. Students should be either enrolled in Algebra II and Chemistry in junior year or planning on taking them in the senior year. A TB test, physical exam, and proof of immunizations are required. There is a mandatory orientation. Approval of instructor or counselor.

This course will provide students with the basic theory and clinical experience for entry-level positions in a physician's office, hospital or outpatient clinic. Students will participate in classroom learning consisting of both theory and hands-on demonstrations and practice, as well as have the opportunity to participate in internships/job shadow experiences with local health care professionals. The curriculum provided allows students to explore their interest in many fields within the medical profession, including but not limited to: nursing, medicine, advanced practice nursing, physician's assistant, laboratory science, emergency medical technology, radiology, surgical technology, and nuclear medicine.

Health Sciences II - Pharmacy Tech

Location: Flat Rock HS

Prerequisite: Open to 2nd year Health Science students only. Orientation requirements fulfilled.

This course will be a continuation of Health Sciences I with a focus on Pharmacy Technician training. Students will participate in classroom learning that will focus on pharmacy operations and the core responsibilities of a pharmacy technician. Topics such as medication review, dosage forms, drug interactions, pharmacy calculations, federal laws and maintaining patient records. Students will have an opportunity to participate in internships/job shadow experience with local pharmacy professionals.

Health Sciences II - Nursing and Allied Health

Location: Grosse Ile HS

Prerequisite: Open to 2nd year Health Science students only. Orientation requirements fulfilled.

This course will be a continuation of Health Sciences I with a focus on Nursing and Allied Health training. This program provides students the fundamental concepts and skills of nursing and allied health which are essential to providing patient centered care throughout the lifespan. Students will learn skills related to the areas such as disease prevention, surgical asepsis, wound care, physical well-being, fluid and nutrition, personal hygiene, mobility, oxygenation, medication administration, and venipunctures. The concepts of professional teamwork, legal, ethical, and cultural issues, quality improvement issues and required communication will be integrated with each skill. Guided job shadowing and simulations will be provided to compliment theory.

Health Sciences II - Sports Medicine

Location: Grosse Ile HS

Prerequisite: Open to 2nd year Health Science students only. Orientation requirements fulfilled.

This course will be a continuation of Health Sciences I with a focus on athletic training and physical therapy. Curriculum includes legal and ethical situations, infection control, safety practices, and practicing skills used in the field. There is a classroom, skill laboratory, and a clinical component. The clinical component may require students to complete after school or weekend opportunities to practice skills with an athletic trainer. A physical therapy clinical experience will also be provided.

Health Sciences II

Location: Wyandotte HS

Prerequisite: Recommendation by Health Sciences I and approval of the instructor. Good attendance, good behavior and proof of immunizations are required. Students are required to provide their own transportation.

The Health Sciences II program is designed to expose the student to a field with many career options. Students will rotate to different areas of the hospital providing transferable skills and experience which will assist in choosing a vocation in the health field. Off-site placement is also available.

Health Sciences III - Work-based Learning

Grade 12

Location: Flat Rock HS
Grosse Ile HS
Woodhaven HS
Wyandotte HS

Prerequisite: Successful completion of Health Sciences I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing health sciences as a career path and has successfully completed Health Sciences I and II. Students in this class should have a placement in an approved health science facility. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Health Sciences III class one day per week to be determined by the instructor.

Heating, Ventilation and Cooling I & II (HVAC)

Grades 11 - 12

Location: Henry Ford College Campus

Note: This is a two-year Dual Enrollment Program offered through Henry Ford College, supported by DCTC and Riverview High School

Prerequisite: Successful completion of a math class, any industrial arts class, and with instructor and counselor approval

Students will earn up to 24 college credits in the program. Students are required to follow the Henry Ford College schedule for classes. Transportation for the first year is provided from a participating DCTC school to HFC. Second year students are required to provide their own transportation.

Students learn fundamentals of refrigeration and air conditioning, and are introduced to temperature, pressure, and measurements. Students will learn the use of refrigeration hand tools and equipment along with the operation of domestic refrigeration and air conditioning.

Students learn troubleshooting of all equipment, use of refrigerant recovery and recycling/reclaiming, service of commercial applications, and basic heating service and installation. Students are given the certification exam.

Horticulture I and II

Grades 11 - 12

Location: Trenton HS

Prerequisite: Instructor or counselor approval

This course is designed to prepare students for either a job in the industry or continuing education in the horticulture field.

In order to achieve this there are both hands-on aspects as well as instruction on the three main topics: plant biology, greenhouse management and landscape design. For the industry aspect some of the things students will be required to do is: identify a variety of plants (both in the greenhouse, agricultural and landscape), plant and maintain a variety of plants in the greenhouse, get knowledge to obtain a license on pesticides, fertilizers, small equipment, etc., creating and implementing landscape plans, maintaining the grounds around the school and involvement in the plant sale at the end of the school year.

Students will understand how plants grow, move nutrients around and reproduce. Students will conduct laboratory experiments on providing the best growing environment for plants. Explore how horticulture can feed the world. Students will study the science behind plant propagation and horticulture relationship to human health.

Junior Reserve Officers Training Corps (JROTC) I, II, III, IV

Grades 9 - 12

Location: Southgate Anderson HS

Army JROTC is a federally coordinated program whose mission is "to motivate young people to be better citizens". The program of instruction helps today's high school students develop goal setting and communication skills as well as teaches leadership skills in preparation for the post high school environment. The Army JROTC curriculum known as Leadership Education and Training, or LET, is a developmental program instructed within the framework of military organization and discipline. The curriculum includes health and fitness, geography, civics, history, and conflict resolution. There is no service obligation associated with this course; however, advanced placement in college ROTC or enlistment in the Armed forces at a higher pay grade is possible as a result of successful completion of 4.0 credit hours of Army JROTC. Uniforms and textbooks are provided at no charge. Physical fitness is a major required activity as well as drill and ceremony (marching). Entry into the program is permitted for grades 9-12; however, 4.0 credit hours are required for the Armed forces benefits at enlistment.

Manufacturing Engineering and CNC Technology I & II

Grades 11 - 12

Location: Henry Ford College MTech Campus

Note: This is a two-year Dual Enrollment Program offered through Henry Ford College, supported by DCTC and Huron High School

Students will earn approximately 18 college credits in the program. Students are required to follow the Henry Ford College schedule for classes. Transportation for the first year is provided from a participating DCTC school to HFC. Second year students are required to provide their own transportation.

This program provides students with the opportunity to obtain skills with Computer Numerical Controlled equipment as part of an Engineering curriculum. Students enrolled in the program will receive training on the latest equipment used in the modern manufacturing environment at Henry Ford College.

Mechantronics I and II

Grades 11 - 12

Location: Airport HS

Ford Flat Rock Assembly Plant

Note: This is a two-year Dual Enrollment Program offered through Henry Ford College, supported by DCTC and Southgate Anderson High School

Mechatronics is a two-year program that combines principles and skills from several areas vital to modern day manufacturing. Electrical, Mechanical, Fluid (Hydraulics and Pneumatics), Computer Control and Automation/Robotics systems are included in Mechatronics. Through a combination of classroom and intense laboratory exposures, students are prepared for entry into a range of career opportunities throughout the manufacturing, healthcare, architecture and other sectors of the economy.

Welding and Fabrication I & II

Grades 11 - 12

Location: Airport HS

Flat Rock HS

Woodhaven HS

Prerequisite: Instructor and counselor approval

Welding and Fabrication is a program designed to provide technical training for a career in welding or its related fields. This course specializes in lab work and shop experience concerned with all types of metal welding, brazing and flame cutting. Students will be exposed to a realistic industrial environment designed to foster safe working skills and practices. Students will also get experience working with all different types of metals and their properties and receive hands-on training in all aspects of metal fabrication, including but not limited to SMAW, GMAW, GTAW, FCAW, OAW, and brazing. Cutting processes such as OAC and plasma cutting will also be emphasized. In addition, students will experience hands-on application of all metal fabrication equipment including the use of high-speed steel drill press, brake, shears, punches, grinders, etc.

The advanced level covers Advanced Arc, Advanced Gas Tungsten, Advanced Gas Metal Arc, Advanced Flux Cored Arc, and oxyacetylene procedures with as much practical experience as possible. Instruction emphasizes properties of metals, blueprint reading, and welding symbols.

Welding and Fabrication III - Work-based Learning

Grade 12

Location: Airport HS

Flat Rock HS

Woodhaven HS

Prerequisite: Successful completion of Welding and Fabrication I and II, program teacher approval, approved placement in field, and completed WBL paperwork.

This class is designed for the student who is choosing welding technology as a career path and has successfully completed Welding and Fabrication I and II. Students in this class should have a placement in an approved welding business. Work Based Learning paperwork must be completed and submitted by the first day of CTE transportation at the start of the school year. Students will be required to attend their Welding and Fabrication III class one day per week to be determined by the instructor.