



Learning that works for Michigan

CTE[™]

The Region 25* Career and Technical Education Program Descriptions

*(*Wayne & Monroe Counties, Michigan—excludes Detroit Public Schools, which has its own region and funding)*

The purpose of “The Region 25 Career and Technical Education (CTE) Program Descriptions” is to guide and assist students, parents, and counselors regarding Career and Technical Education program opportunities within Region 25 (Wayne and Monroe Counties).

In most if not all cases, students have the opportunity to attend programs within their district and neighboring districts.

All CTE programs are designed to prepare students for internships, apprenticeships, and entry-level career opportunities within their CTE program of study and/or continued postsecondary education.



**Preparing today's
students for
tomorrow's world**

WAYNE RESA
Leading... Learning for All

**SERVICE
LEADERSHIP
COLLABORATION
EXCELLENCE**



Printed February 2018

Most current information available as of this printing.

An electronic copy of this document is available at:
www.resa.net/cte

Copies may be made for educational purposes but cannot be sold.
Please acknowledge the source.

Region 25 CTE Focus: Careers and College

CTE Mission: Prepare and support high school students for a smooth transition into high-skill, high-wage, and/or high-demand careers and appropriate postsecondary education.

CTE Programs: Provide students instruction and experience in the real-world application of academic skills, industry-based skill standards, and interpersonal workplace skills and behaviors in order to become intern-ready for employment and/or postsecondary education. These programs also provide students the opportunity to earn college credit while in secondary CTE programs.

Region 25 Members and Partners

2 Counties (Wayne and Monroe) • 39 School Districts*

4 Career and Technical Centers • 3 Consortia

30 Choices of Career Cluster Pathway Programs

REGIONAL EDUCATIONAL SERVICE AGENCIES (ESA)

Monroe County Intermediate School District (Monroe ISD)

Wayne County Regional Educational Service Agency (Wayne RESA)

EDUCATION, BUSINESS, AND COMMUNITY PARTNERS

Baker College • Botsford Hospital • Davenport University • Eastern Michigan University

Employment Training and Designs Incorporated • Ferris State University • Henry Ford Community College

Henry Ford Wyandotte Hospital • Local Business Advisory for each CTE program • Local Chambers of Commerce

Michigan Advanced Technician Training Program (MAT2) • MIAT College of Technology • Michigan Department of Education

Monroe County Community College • Regional Business Advisory for each of the Career Clusters • Regional St. Clair STEM Hub Schoolcraft College • SEMCA Region 25 Workforce Development Board Education Advisory Group and Education Council

University of Michigan–Dearborn • Washtenaw Community College • Wayne County Community College • Wayne State University

WIN (Workforce Intelligence Network)

SECONDARY SCHOOL DISTRICTS* (Includes Public School Academies)

Advanced Technology Academy • Airport • Allen Park • Bedford • Chandler Park Academy • Crestwood • Dearborn City

Dearborn Heights #7 • Dundee • Flat Rock • Garden City • Gibraltar • Grosse Ile • Grosse Pointe • Hamtramck • Harper Woods • Huron

Ida • Jefferson • Lincoln Park • Livonia • Mason • Melvindale • Monroe • Melvindale • Northville • Plymouth–Canton • Redford Union

River Rouge • Riverview • Romulus • South Redford • Southgate • Summerfield • Taylor • Trenton • Van Buren • Wayne–Westland

Westwood • Whiteford



Preparing today's students for tomorrow's world

Monroe County ISD

1101 S. Raisinville Road • Monroe, MI 48161
734.242.5799 • www.monroeisd.us

Board of Education

Russell Bless • Dale DeSloover • Renee Larzelere
Paul Miller • Linda Stiegel

Stephen J. McNew, Ed.D., Superintendent



SERVICE
LEADERSHIP
COLLABORATION
EXCELLENCE

Wayne RESA

33500 Van Born Road • Wayne, MI 48184
734.334.1300 • 734.334.1620 FAX • www.resa.net

Board of Education

James S. Beri • Mary E. Blackmon • Danielle Funderburg
Lynda S. Jackson • James Petrie

Randy A. Liepa, Ph.D., Superintendent

Table of Contents

Career Clusters and Career Pathways with Descriptions and Sample Careers4

CTE PROGRAMS BY CAREER CLUSTER

Agriculture, Food and Natural Resources8

Architecture and Construction8

Arts, Audio/Video Technology and Communications 10

Business Management and Administration 11

Education and Training 11

Finance 12

Government and Public Administration 12

Health Science 13

Hospitality and Tourism 13

Human Services 14

Information Technology 15

Law, Public Safety, Corrections and Security 17

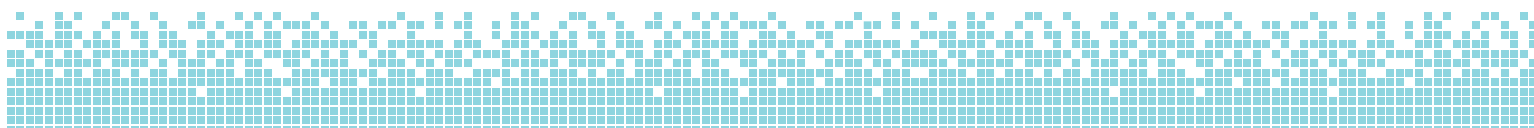
Manufacturing 18

Marketing 20

Science, Technology, Engineering and Mathematics 21






Transportation, Distribution and Logistics 22

Index of Programs 23



Career Clusters and Career Pathways






with Descriptions and Sample Careers

Career Cluster	Career Pathway	Descriptions	Sample Careers*
	<ul style="list-style-type: none"> • Food Products & Processing Systems • Plant Systems • Animal Systems • Power, Structural & Technical Systems • Natural Resource Systems • Environmental Service Systems • Agribusiness Systems 	<p>This Cluster prepares students for careers in the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.</p>	<ul style="list-style-type: none"> • Food Scientist • Environmental Engineer • Agriculture Teacher • Animal Scientist • Biochemist • Veterinarian <p style="text-align: right;">Page 8</p>
	<ul style="list-style-type: none"> • Design/Pre-Construction • Construction • Maintenance/Operations 	<p>This Cluster prepares students for careers in designing, planning, managing, building and maintaining the built environment.</p>	<ul style="list-style-type: none"> • Contractor • Architect • Electrician • Civil Engineer • Carpenter • Plumber • Interior Designer <p style="text-align: right;">Page 8</p>
	<ul style="list-style-type: none"> • Audio & Video Technology & Film • Printing Technology • Visual Arts • Performing Arts • Journalism & Broadcasting • Telecommunications 	<p>This Cluster prepares students for careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.</p>	<ul style="list-style-type: none"> • Actor-Actress • Media Producer • Radio and TV Announcer • Audio Engineer • Tele-Communications Technologist • Multimedia Artist and Animator <p style="text-align: right;">Page 10</p>
	<ul style="list-style-type: none"> • General Management • Business Information Management • Human Resources Management • Operations Management • Administrative Support 	<p>This Cluster prepares students for careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Career opportunities in this cluster are available in every sector of the economy.</p>	<ul style="list-style-type: none"> • Human Resources Administrator • Public Relations Specialist • Auditor • Accountant • Operations Manager • Transportation Manager <p style="text-align: right;">Page 11</p>
	<ul style="list-style-type: none"> • Administration & Administrative Support • Professional Support Services • Teaching/Training 	<p>This Cluster prepares students for careers in planning, managing and providing education and training services, and related learning support services such as administration, teaching/training, administrative support, and professional support services.</p>	<ul style="list-style-type: none"> • Teacher • Principal • School Counselor • College Professor • Corporate Trainer • Interpreters and Translators <p style="text-align: right;">Page 11</p>

*O*Net online. US Department of Labor/Employment and Training 2013. Web 3 March 2014. <http://www.onetonline.org>

Page number corresponds to Career Cluster CTE program.





Career Clusters and Career Pathways with Descriptions and Sample Careers—Continued

Career Cluster	Career Pathway	Descriptions	Sample Careers*
 <p>Finance</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Securities & Investments • Business Finance • Accounting • Insurance • Banking Services 	<p>This Cluster prepares students for careers in the planning of and related services for financial and investment planning, banking, insurance, and business financial management.</p>	<ul style="list-style-type: none"> • Stock Broker • Financial Specialist • Insurance Agent • Financial Planner • Loan Officer • Tax Preparer <p style="text-align: right;">Page 12</p>
 <p>Government & Public Administration</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Governance • National Security • Foreign Service • Planning • Revenue & Taxation • Regulation • Public Management & Administration 	<p>This Cluster prepares students for careers in executing governmental functions at the local, state and federal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.</p>	<ul style="list-style-type: none"> • Legislator • City Manager • Detective and Criminal Investigator • Operations Manager • State/Federal Agency Director • Urban/Regional Planner <p style="text-align: right;">Page 12</p>
 <p>Health Science</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Therapeutic Services • Diagnostic Services • Health Informatics • Support Services • Biotechnology Research & Development 	<p>This Cluster prepares students for careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.</p>	<ul style="list-style-type: none"> • Pediatrician • Physical Therapist • Pharmacist • Occupational Therapist • Hospital Administrator • Biomedical Engineer <p style="text-align: right;">Page 13</p>
 <p>Hospitality & Tourism</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Restaurants & Food/Beverage Services • Travel & Tourism • Lodging • Recreation, Amusements & Attractions 	<p>This Cluster prepares students for careers in the management, marketing and operations of restaurants and other food services, lodging, attractions and recreational events and tourism-related services.</p>	<ul style="list-style-type: none"> • Event Planner • Chef • Travel and Tourism Manager • Food Service Manager • Sports Official • Leisure and Entertainment Manager <p style="text-align: right;">Page 13</p>
 <p>Human Services</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Early Childhood Development & Services • Counseling & Mental Health Services • Family & Community Services • Personal Care Services • Consumer Services 	<p>This Cluster prepares students for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.</p>	<ul style="list-style-type: none"> • Social Worker • Therapist • Cosmetologist • Substance Abuse Specialist • Employment Specialist • School Psychologist <p style="text-align: right;">Page 14</p>

*O*Net online. US Department of Labor/Employment and Training 2013. Web 3 March 2014. <http://www.onetonline.org>



Page number corresponds to Career Cluster CTE program.

Career Clusters and Career Pathways with Descriptions and Sample Careers—Continued

Career Cluster	Career Pathway	Descriptions	Sample Careers*
 <p>Information Technology</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Network Systems • Information Support & Services • Web & Digital Communications • Health, Safety & Environmental Assurance • Programming & Software Development 	<p>This Cluster prepares students for careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.</p>	<ul style="list-style-type: none"> • Software Engineer • Computer and Information Systems Manager • Videogame Designer • Database Administrator • Business Intelligence Analyst <p style="text-align: right;">Page 15</p>
 <p>Law, Public Safety, Corrections & Security</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Correction Services • Emergency & Fire Management Services • Law Enforcement Services • Legal Services • Security & Protective Services 	<p>This Cluster prepares students for careers in planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.</p>	<ul style="list-style-type: none"> • Attorney • Fire Fighter • Police Officer • Judge • Paramedic • Paralegal • Corrections Officer <p style="text-align: right;">Page 17</p>
 <p>Manufacturing</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Production • Manufacturing Production Process Development • Maintenance, Installation & Repair • Quality Assurance • Logistics & Inventory Control • Health, Safety & Environmental Assurance 	<p>This Cluster prepares students for careers in planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.</p>	<ul style="list-style-type: none"> • Machinist • Manufacturing Engineer • Electronics Engineering Technician • Production Engineer • Welding Technician • Automotive Specialty Technician • Robotics Technician <p style="text-align: right;">Page 18</p>
 <p>Marketing</p> <p><small>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS</small></p>	<ul style="list-style-type: none"> • Marketing Management • Professional Sales • Merchandising • Marketing Communications • Marketing Research 	<p>This Cluster prepares students for careers in planning, managing, and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing communications and market research.</p>	<ul style="list-style-type: none"> • Sales Manager • Marketing Director • Real Estate Broker • Customer Service Representative <p style="text-align: right;">Page 20</p>

*O*Net online. US Department of Labor/Employment and Training 2013. Web 3 March 2014. <http://www.onetonline.org>
Page number corresponds to Career Cluster CTE program.

Career Clusters and Career Pathways with Descriptions and Sample Careers—Continued

Career Cluster	Career Pathway	Descriptions	Sample Careers*
 <p>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS Science, Technology, Engineering & Mathematics</p>	<ul style="list-style-type: none"> • Science • Technology • Engineering • Mathematics 	<p>This Cluster prepares students for careers in planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.</p>	<ul style="list-style-type: none"> • Chemical Engineer • Aerospace Engineer • Biomedical Engineer • Electrical Engineer • Biologist <p style="text-align: right;">Page 21</p>
 <p>CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS Transportation, Distribution & Logistics</p>	<ul style="list-style-type: none"> • Transportation Operations • Logistics Planning & Management Services • Warehouse & Distribution Center Operations • Facility & Mobile Equipment Maintenance • Transportation Systems/ Infrastructure • Planning, Management & Regulation • Health, Safety & Environmental Management • Sales & Service 	<p>This Cluster prepares students for careers in the planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.</p>	<ul style="list-style-type: none"> • Pilot • Automotive Technician • Logistics Manager • Transportation Manager • Warehouse Manager • Truck Driver <p style="text-align: right;">Page 22</p>

In Michigan, all high school state-approved CTE programs are required to incorporate the state's industry-based standards for their specific career cluster pathway/CIP code. The consistency of program standards supports continuous program improvement.

*O*Net online. US Department of Labor/Employment and Training 2013. Web 3 March 2014. <http://www.onetonline.org>

Page number corresponds to Career Cluster CTE program.

CTE Programs by Career Cluster

Agriculture, Food & Natural Resources			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Agriculture, Agricultural Operations and Related Sciences CIP# 1.0000	This program focuses on the general principles and practice of agricultural research and production designed to prepare students to apply this knowledge to the solution of practical agricultural problems. It includes instruction in basic animal, plant, and soil science; animal husbandry and plant cultivation; soil conservation; natural resources and agricultural operations such as farming, ranching, and agricultural business.	<ul style="list-style-type: none"> • Science • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Animal Systems
	Offered by: Airport • Dundee • Lincoln Park • Whiteford		
Applied Horticulture and Horticultural Operations CIP# 1.0601	This program focuses on the general production and processing of domesticated plants, shrubs, flowers, foliage, trees, ground cover, and related plant materials; the management of technical and business operations connected with horticultural services; and the basic scientific principles needed to understand plants and their management and care.	<ul style="list-style-type: none"> • Science • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Plant Systems
	Offered by: Wyandotte: Roosevelt		

Architecture & Construction			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Construction Trades CIP# 46.0000	This program prepares students to apply technical knowledge and skills in the building, inspection, and maintenance of structures and related properties. It includes instruction in carpentry; electrical and power transmission installation; building/construction finishing; management, inspection; lay out; cut, fabrication, erection, installation, and repair of wooden structures and fixtures using hand and power tools; technical Mathematicsematics; framing construction materials and selection; job estimating; blueprint reading; foundations and roughing-in; finishing carpentry techniques; and applicable codes and standards.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Construction
	Offered by: Allen Park • Bedford • Dundee • Garden City • Gibraltar: Carlson • Jefferson • Lincoln Park Mason • Monroe • Southgate: Anderson • Taylor: Taylor Career TC • Wayne-Westland: Wm. Ford Career TC Whiteford		

CTE Programs by Career Cluster

Architecture & Construction—continued			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Drafting and Design Technology CIP# 15.1301	<p>This program prepares students to apply technical knowledge and skills to create products using techniques of precision craftsmanship or technical illustration. It provides a broad foundation of applied academics and transferable basic skills, plus occupationally-specific technical skills required to function in an increasingly complex and highly technological society and workplace. It includes instruction in technical skills and advanced computer software and hardware; creation of graphic representations and simulations in support of engineering projects; engineering graphics; two-dimensional and three-dimensional engineering design; solid modeling; engineering animation; computer-aided drafting (CAD) and auto-CAD techniques; and manufacturing design projects.</p>	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Design/ Pre-Construction
	<p>Offered by: Airport • Bedford • Dearborn Hgts. #7: Annapolis • Hamtramck • Lincoln Park Livonia: Livonia Career TC • Monroe • Southgate: Anderson • Trenton Wayne-Westland: John Glenn • Wyandotte: Roosevelt</p>		
Heating, Air Conditioning, Ventilation and Refrigeration CIP# 47.0201	<p>This program prepares students to apply technical knowledge and skills to repair, install, service and maintain the operating condition of heating, air conditioning, and refrigeration systems. It includes instruction in diagnostic techniques; the use of testing equipment; and the principles of mechanics, electricity, and electronics as they relate to the repair of heating, air conditioning and refrigeration systems.</p>	<ul style="list-style-type: none"> • Mathematics • Online Learning 	<ul style="list-style-type: none"> • Construction
	<p>Offered by: Wayne-Westland: Wm. Ford Career TC</p>		

CTE Programs by Career Cluster

Arts, A/V Technology & Communications			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Fashion Design CIP# 19.0906	This program prepares students in the construction of a major product from a commercial pattern and to assist in apparel and fashion selection; style coordination; customer sales and consulting; fabric selection; and clothing specifications. It includes instruction in garment construction; clothing color and design; pattern reading; symbols; and interpreting terms.	<ul style="list-style-type: none"> • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Visual Arts
	Offered by: Monroe		
Graphics and Printing Technology and Communications CIP# 10.0301	This program prepares students to apply technical knowledge and skills in the manufacturing and distribution or transmission of graphic communications products. This includes instruction in the pre-press, press, and post-press phases of production operations; and processes such as offset lithography, flexography, gravure, letterpress, screen printing, foil stamping, digital imaging, and other reproduction methods.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Printing Technologies
	Offered by: Dearborn Hgts. #7: Annapolis • Garden City • Hamtramck • Harper Woods Livonia: Livonia Career TC • Plymouth-Canton Educational Park • Romulus • Southgate: Anderson Wayne-Westland: Wm. Ford Career TC • Woodhaven–Brownstown: Woodhaven		
Radio & TV Broadcasting Technology CIP# 10.0202	This program prepares students to apply technical knowledge and skills to the production of radio and television programs; and related operations under the supervision of broadcast and studio managers, directors, editors, and producers. This program includes instruction in sound; lighting; camera operation and maintenance; power and feed control; studio operations; production preparation; broadcast engineering; related computer applications; and specialized applications such as news, entertainment, live talk, sports, commercials, and taping. This course links to the knowledge and skills critical in Broadcast, Film and Journalism; and Audio Video Communication Technology.	<ul style="list-style-type: none"> • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Audio & Video Technology
	Offered by: Bedford • Gibraltar: Carlson • Grosse Pointe: North, South • Harper Woods • Trenton Wayne-Westland: Wm. Ford Career TC •		

CTE Programs by Career Cluster

Business Management & Administration			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Business Administration Management and Operations CIP# 52.0299	This program prepares students to plan, manage, supervise, and market business operations, products, and services. It includes instruction in business administration; information management; human resource management; business law; ethics; business communications utilizing application software; preparing and delivering presentations; planning and organizing projects; and decision making in a business environment.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Business Information Management
	Offered by: Airport • Bedford • Dearborn: Advanced Technology Academy • Dearborn: Edsel Ford, Fordson, Michael Berry Career Center • Dearborn Hgts. #7: Annapolis • Gibraltar: Carlson • Hamtramck Grosse Pointe: North, South Livonia: Livonia Career TC, Churchill, Franklin, Stevenson • Melvindale Monroe • Plymouth-Canton Educational Park • Riverview • Romulus • Southgate: Anderson Taylor: Taylor Career TC • Van Buren: Belleville • Woodhaven- Brownstown: Woodhaven		

Education & Training			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Education General (Teacher Cadet) CIP# 13.0000	This program focuses on the general theory and practice of learning and teaching. It includes instruction in the basic principles of educational psychology; the art of teaching; the planning and administration of educational activities; school safety and health issues; and the social foundations of education. Possible areas of concentration include teaching and training, professional support services, administration, and administrative support.	<ul style="list-style-type: none"> • Mathematics • Science • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Teaching/Training
	Offered By: Grosse Ile • Plymouth-Canton Educational Park • Wayne-Westland Wm. Ford Career TC		

CTE Programs by Career Cluster

Finance			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Finance and Financial Management Services CIP# 52.0800	<p>This program prepares students to plan for and evaluate a business' operations, financial and investing decisions and how accounting systems gather and communicate financial information to internal and external decision makers. Topics include an introduction to accounting, the accounting cycles, accounting information systems, financial analysis, business law, and entrepreneurship.</p>	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Accounting
<p>Offered By: Airport • Bedford • Chandler Park Academy • Dearborn: Fordson, M. Berry Career TC Dearborn Hgts. #7: Annapolis • Garden City • Gibraltar: Carlson • Grosse Pointe: North, South Hamtramck • Huron • Melvindale • Monroe • Northville • Plymouth-Canton Educational Park Riverview • Romulus • Southgate: Anderson • Van Buren: Belleville • Woodhaven-Brownstown: Woodhaven</p>			

Government & Public Administration			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Army JROTC CIP# 28.0301	<p>This program prepares and refines the traits of leadership within individual students by emphasizing the qualities of a leader and the challenges to leadership. The four-year program is designed to motivate students to become better citizens. It includes instruction in the precepts of citizenship and emphasizes self-confidence, self-discipline, and community service. Students also receive CERT (Community Emergency Response Team) certification as part of this program.</p>	<ul style="list-style-type: none"> • Physical Education • Health • History • On-line Learning <p><i>(Academic credit given is dependent upon number of years in program).</i></p>	<ul style="list-style-type: none"> • National Security
<p>Offered By: Chandler Park Academy • Southgate: Anderson</p>			

CTE Programs by Career Cluster

Health Science			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Therapeutic Services CIP# 51.0000	This program provides students the needed skills in health careers which focus primarily on changing the health status of the patient over time. Careers in the Therapeutic Services course work directly with patients and may also provide care, treatment, counseling, and health education information. Additional subject areas are Nursing Occupations, Dental Occupations, Pharmacy Assisting, Medical/Rehab Services, Emergency Medical Services, Medical Services, and Veterinary Science.	<ul style="list-style-type: none"> • Mathematics • Science • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Therapeutic Services
	Dearborn: Michael Berry Career Center • Dearborn Hgts. #7: Annapolis • Flat Rock • Grosse Ile Livonia: Livonia Career TC • Monroe • Plymouth-Canton Educational Park • Romulus Taylor: Taylor Career TC • Trenton • Wayne-Westland: Wm. Ford Career TC Woodhaven-Brownstown: Woodhaven • Wyandotte: Roosevelt		

Hospitality and Tourism			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Cooking and Related Culinary Arts CIP# 12.0500	This program focuses on preparing students for management, marketing, and operations of restaurant and other food services; lodging, attractions, recreation events, and travel related services. Skills acquired in this program include operational and management skills; event planning and organization; customer service; aspects of the travel industry; food preparation; time management; communication; decision making; project management; and entrepreneurship.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • Online Learning 	<ul style="list-style-type: none"> • Travel and Tourism
	Offered By: Dearborn: Michael Berry Career Center • Livonia • Franklin • Grosse Pointe: North, South Plymouth-Canton Educational Park • Riverview • River Rouge • Romulus • Taylor: Taylor Career TC Wayne-Westland: Wm. Ford Career TC		

CTE Programs by Career Cluster

Human Services			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Cosmetology CIP# 12.0400	This course prepares students to cut, trim, and style scalp, and facial hair; apply cosmetic preparations; perform manicures and pedicures; massage the head and extremities; and prepares students for practice as licensed cosmetologists in specialized or full-service salons. It includes instruction in hair shampooing, cutting and styling; manicures; pedicures; facial treatments; chemical applications; esthetics; shop management; sanitation and safety; customer service; and applicable professional and labor laws and regulations.	<ul style="list-style-type: none"> • Mathematics • Science • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Personal Care Services
Family and Consumer Sciences CIP# 19.0000	This course prepares students to evaluate, coordinate, and function in multiple adult roles of day-to-day living and working throughout the life cycle. Students develop an individual sense of well-being to become contributing members of society as a family member, worker, nurturer, consumer, citizen, and life-long learner. Family and Consumer Science Education promotes the growth of the individual in a holistic manner—including physical, social, emotional, and intellectual development.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Personal Care Services

CTE Programs by Career Cluster

Information Technology			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Computer and Information Systems Security/information Assurance CIP# 11.1003	This program prepares individuals to assess the security needs of computer and network systems, recommend safeguard solutions, and manage the implementation and maintenance of security devices, systems, and procedures. Includes instruction in computer architecture, programming, and systems analysis; networking; telecommunications; cryptography; security system design; applicable law and regulations; risk assessment and policy analysis; contingency planning; user access issues; investigation techniques; and troubleshooting.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Cyber Security
	Offered By: Bedford • Grosse Pointe: South • Plymouth-Canton Educational Park		
Computer Programming/ Programmer CIP# 11.0201	This program prepares students to apply the knowledge and skills of general computer programming to the solution of specific operational problems and customization requirements presented by individual software and organizational users. It includes training in specific types of software, design, development, and implementation; identifying customer needs; programming tools and techniques; creating codes; testing and validation; the maintenance of computer systems and software; and project management.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Programming & Software Development
	Offered By: Allen Park • Bedford • Dearborn: Michael Berry Career Center Plymouth-Canton Educational Park Northville • Romulus • Taylor: Taylor Career TC Wayne-Westland: John Glenn • Wm. Ford Career TC		
Computer Systems Networking and Telecommunications CIP# 11.0901	This program focuses on the design, implementation, and management of linked systems of computers, peripherals, and associated software to maximize efficiency and productivity. It prepares students to function as network specialists and managers at various levels. It includes instruction in operating systems and applications; systems design and analysis; networking theory and solutions; types of networks; network management and control; network and flow optimization; security; configuration; troubleshooting; project management; identifying customer needs and providing technical support.	<ul style="list-style-type: none"> • Mathematics • On-line Learning 	<ul style="list-style-type: none"> • Network Systems
	Offered By: Dearborn Hgts. #7: Annapolis • Harper Woods • Livonia: Livonia Career TC		

CTE Programs by Career Cluster

Information Technology—continued			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Digital/Multimedia and Information Resources Design CIP# 11.0801	This program prepares students to utilize programming software, graphics applications, and other authoring tools to design, edit, and publish (launching) documents, images, graphics, sound, and multimedia products on the internet. It includes instruction in internet theory; web page standards and policies; elements of web page design; web programming and hosting; databases; email and personal information management; security; as well as creating media product specifications; user interfaces; vector tools; special effects; interactive and multimedia components; search engines; navigation; e-commerce tools; emerging web technologies; project management; and providing customer support.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Interactive Media
	Offered By: Airport • Bedford • Dearborn: Michael Berry Career Center • Gibraltar: Carlson Grosse Pointe: North • Livonia: Livonia Career TC • Melvindale • Monroe Plymouth-Canton Educational Park • Romulus Taylor: Taylor Career TC		
System Administration/ Administrator CIP# 11.1001	This program prepares students to manage computer operations and control system configurations emanating from a specific site or network hub. It includes instruction in computer hardware and software applications; managing software systems; evaluating application software packages; basic web programming; web hosting; systems analysis and design; system installation and maintenance; local area network (LAN) and wide area (WAN) networking; principles of information systems security; disk space and traffic load monitoring; data backup; resource allocation; setup and takedown procedures; customer service, and project management.	<ul style="list-style-type: none"> • Mathematics • On-line Learning 	<ul style="list-style-type: none"> • Information Support & Services
	Offered By: Airport • Livonia: Livonia Career TC • Plymouth-Canton Educational Park		

CTE Programs by Career Cluster

Law, Public Safety, Corrections & Security			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Public Safety/ Protective Services CIP# 43.0100	This program focuses upon the principles and procedures for providing police, fire, and other safety services and managing penal institutions.	<ul style="list-style-type: none"> • Mathematics • On-line Learning 	<ul style="list-style-type: none"> • Emergency & Fire Management Services • Law Enforcement
Offered By: Livonia: Livonia Career TC • Wayne-Westland: Wm. Ford Career TC • Westwood: Robichaud			

CTE Programs by Career Cluster

Manufacturing			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Electrical/Electronics Equipment, Installation and Repair CIP# 47.0101	This program prepares students to identify and diagnose equipment problems in order to effectively repair manufacturing equipment. Instruction includes a hands-on knowledge of equipment operation to identify maintenance needs and maximize performance; installation, customization or upgrading techniques in order to ensure the proper functioning of manufacturing equipment; creating and following a preventative maintenance schedule to maintain manufacturing equipment tools and workstations; and coordinating predictive and preventive maintenance to ensure that production process runs smoothly.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Maintenance, Installation, & Repair
	Offered By: Monroe • Wayne-Westland: Wm. Ford Career TC		
Machine Tool Operation/Machine Shop CIP# 48.0501	This program prepares students to apply technical knowledge and skills to plan; manufacture; assemble; test and repair parts, mechanisms, machines, and structures in which materials are cast, formed, shaped, molded, heat treated, cut, twisted, pressed, fused, stamped, or worked.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Production
	Offered By: Bedford • Monroe • Taylor: Taylor Career TC • Wyandotte: Roosevelt		

CTE Programs by Career Cluster

Manufacturing—continued			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Welding, Brazing, and Soldering CIP# 48.0508	This program prepares students to apply technical knowledge and skills to join or cut metal surfaces. It includes instruction in arc and resistance welding; brazing and soldering; welding and cutting; solid state welding; ferrous and non-ferrous materials; oxidation-reduction reactions; welding metallurgy; welding processes and heat treating structural design; safety; and the applicable codes and standards.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Production
Woodworking General CIP# 48.0701	This program prepares students to apply technical knowledge and skills to prepare and execute furniture design projects; lay out and shape stock; assemble wooden articles or subassemblies; mark, bind, saw, carve, and sand wooden products; and repair wooden articles. Instruction also includes the use of a variety of hand and power tools.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Maintenance, Installation, & Repair

CTE Programs by Career Cluster

Marketing			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Marketing, Sales and Service CIP# 52.1999	This program focuses on planning, managing, and performing wholesaling and retailing services and related marketing and distribution support services including merchandise/product management and promotion. Various specialty areas are included. Skills acquired in this course include customer service; problem solving; process/system thinking; project management; communication; and decision making.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Marketing Management
	<p>Offered By: Airport • Bedford • Chandler Park Academy Dearborn: Michael Berry Career Center, Dearborn HS, Fordson Garden City, Gibraltar: Carlson • Grosse Pointe: North, South • Hamtramck • Harper Woods • Huron Jefferson • Lincoln Park • Livonia: Livonia Career TC, Churchill, Franklin, Stevenson • Monroe Plymouth-Canton Educational Park • Romulus • Southgate: Anderson • Taylor: JF Kennedy, Truman Trenton • Van Buren: Belleville • Woodhaven-Brownstown: Woodhaven • Wyandotte: Roosevelt</p>		

CTE Programs by Career Cluster

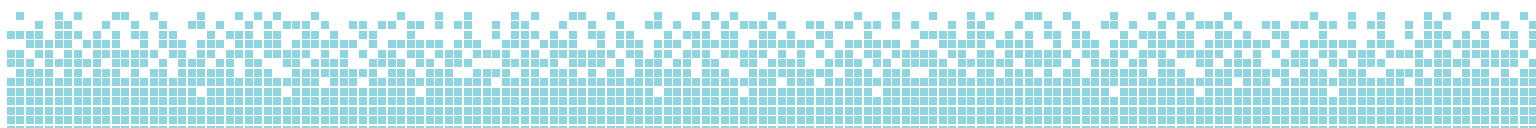
Science, Technology, Engineering & Mathematics			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Engineering Technology CIP# 15.0000	This program prepares students to apply basic engineering principles and technical skills in support of engineers engaged in a wide variety of projects. It includes instruction in various engineering support functions for research, production, and operations and applications to specific engineering specialties such as component design process; two and three-dimensional object creations; parametric sketching and drawing; advanced modeling and designs; prototype creation; materials properties; stress analysis; pneumatics; power and energy and reverse engineering as well as engineering ethics.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Engineering & Technology
	Offered By: Garden City • Melvindale • Plymouth-Canton Educational Park		
Mechanical Drafting CIP# 15.1306	This program prepares students to apply technical knowledge and skills to develop working drawings and electronic simulations in support of mechanical and industrial engineers and related professionals. Instruction includes manufacturing materials and processes, mechanical drafting, electrode-mechanical drafting, basic metallurgy, geometric dimensioning and tolerancing, blueprint reading, and technical communication.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Engineering & Technology
	Offered By: Flat Rock • Hamtramck • Lincoln Park • Livonia: Livonia Career TC Southgate: Anderson • Trenton		
Mechatronics CIP# 14.4201	This program prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of computer controlled electro-mechanical systems and products with embedded electronics, sensors, and actuators; and which includes, but is not limited to, automata, robots and automation systems. Includes instruction in mechanical engineering, electronic and electrical engineering, computer and software engineering, and control engineering.	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Engineering & Technology
	Offered By: Dearborn: Advanced Technology Academy • Southgate: Anderson		

CTE Programs by Career Cluster

Transportation, Distribution & Logistics			
Program Name CIP#***	Program Description	Academic Credit and/or High School Graduation Requirement Possibilities	Cluster Pathway Name
Automotive Technician (NATEF Certified) CIP# 47.0604	<p>This instructional program prepares students to engage in the servicing, maintenance, adjustment, and repair of automotive components and systems. It also provides a sequence of learning experiences related to the National Automotive Technicians Education Foundation (NATEF) and repair categories requiring certification. This program may include diesel engine repair. Learning activities in the classroom, laboratory, shop, and actual work setting are combined to provide students with the opportunity to become knowledgeable of nomenclature; safety principles and practices; and job entry level skills in disassembling, assembling, inspecting, repairing, and replacing components or systems.</p>	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Facilities & Mobile Equipment Maintenance
	<p>Offered By: Airport • Bedford • Dearborn: Edsel Ford, Fordson • Huron • Jefferson Livonia: Livonia Career TC • Monroe • Plymouth-Canton Educational Park • Romulus • Trenton Wayne-Westland: Wm. Ford Career TC • Wyandotte: Roosevelt</p>		
Collision Repair Technician (NATEF Certified) CIP# 47.0603	<p>This program prepares students to apply technical knowledge and skills to repair, reconstruct, and finish automobile bodies, fenders, and external features. It provides a sequence of learning experiences related to the National Automotive Technicians Education Foundation (NATEF) and repair categories requiring certification. Learning activities in the classroom, laboratory, shop, and actual work setting are combined to provide students with the opportunity to become knowledgeable of nomenclature; safety principles and practices; and job-entry level skills.</p>	<ul style="list-style-type: none"> • Mathematics • Visual, Performing and Applied Arts • On-line Learning 	<ul style="list-style-type: none"> • Facilities & Mobile Equipment Maintenance
	<p>Offered By: Huron • Wayne-Westland: Wm. Ford Career TC</p>		
Power Plant Technology (Aircraft) CIP# 47.0608	<p>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.</p>	<ul style="list-style-type: none"> • Mathematics • On-line Learning 	<ul style="list-style-type: none"> • Facilities & Mobile Equipment Maintenance
	<p>Offered By: Grosse Ile, Romulus</p>		

Index of Programs

STATE APPROVED CTE PROGRAM	PAGE NO.
Agriculture	8
Applied Horticulture	8
Army JROTC	12
Automotive Technician	22
Business Administration Management and Operations	11
Collision Repair Technician	22
Computer and Information Systems Security/Information Assurance	15
Computer Programming/Programmer	15
Computer Systems, Networking, and Telecommunications	15
Construction Trades	8
Cosmetology	14
Drafting and Design Technology	9
Digital/Multimedia and Information Resource Design	16
Education	11
Electrical/Electronics Equipment Installation and Repair	18
Engineering Technology	21
Fashion Design	10
Finance and Financial Management	12
Graphics and Printing Technology and Communications	10
Heating, Air-Conditioning, Ventilation, and Refrigeration (HVAC)	9
Machine Tool Operation/Machine Shop	18
Marketing, Sales, and Service	20
Mechanical Drafting	21
Mechatronics	21
Personal and Culinary Services	13
Power Plant Technology (Aircraft)	22
Public Safety/Protective Services	17
Radio and TV Broadcasting Technology	10
System Administration/Administrator	16
Therapeutic Services	13
Welding, Brazing, and Soldering	19
Woodworking	19





The Career Clusters™ brand logo and its extensions are the property of the National Career Technical Education Foundation, as managed by NASDCTEc.

These materials were developed under a grant awarded by the Michigan Department of Education.

Wayne RESA will not discriminate against any person based on sex, race, color, national origin, religion, height, weight, marital status, handicap, age, sexual orientation, or disability. The Board reaffirms its long-standing policy of compliance with all applicable federal and state laws and regulations prohibiting discrimination. Inquiries related to the non-discrimination policy should be directed to the Executive Director of Human Resources, at 734.334.1614, 33500 Van Born Road, Wayne, MI 48184.

The Monroe County Intermediate School District does not discriminate on the basis of religion, race, color, national origin, sex, disability, age, height, weight, marital status or familial status in its programs, activities or in employment. The following person has been designated to handle inquiries regarding the non-discrimination policies: Elizabeth J. Taylor, Assistant Superintendent for Human Resources and Legal Counsel, 1101 S. Raisinville Road, Monroe, MI 48161; Phone: 734.242.5799, ext. 1200.

