

## 2016 – 17 Programs of Study

Tennessee’s Career and Technical Education (CTE) Programs of Study are meant to provide a relevant framework of industry-aligned, rigorous courses that progress a student in knowledge and skills year over year. They also provide invaluable opportunities for students to experience a subject they are passionate about and explore interests that could lead to postsecondary learning and future career paths. These sequenced courses also reflect and support the three credit “elective focus” requirement for graduation. Level one courses are most often taken by students in ninth grade; however, districts may make scheduling decisions that work best for their communities and students.

To become a concentrator in CTE and to fulfill the elective focus requirement, a student must earn three credits in a Program of Study or a Career Cluster. Courses in a Career Cluster include those listed as part of a Program of Study, as well as courses that are identified as cluster electives (listed, where applicable, at the end of each Career Cluster). Work-based learning (WBL) is seen as a valuable opportunity for all CTE students. The newly released **Work-Based Learning: Career Practicum** course may substitute for the Level 3 or 4 offerings in all Programs of Study. For more information, please refer to the Department of Education’s Work-Based Learning Policy Guide at:

<https://tn.gov/education/topic/work-based-learning>. Early postsecondary opportunities (EPSO), such as dual-enrollment and dual-credit courses, are also a valuable opportunity for all students. The newly released **Dual Enrollment course codes** found in the 2015-16 Correlations of Course Codes document may also substitute for the Level 3 or 4 offerings in any aligned career cluster’s Programs of Study where those course codes represent postsecondary courses.

An introductory **Career Exploration** course is available to orient 8<sup>th</sup> and 9<sup>th</sup> grade students to high school, postsecondary, and career options and develop 21<sup>st</sup> century skills. This course can serve as a prerequisite for any CTE course and program of study; however it is not a required part of any program of study and should not be counted toward CTE concentrator status.

For additional information about any courses or Programs of Study in the 16 Career Clusters, please reach out to the following Career Cluster Consultants or visit our webpage at: <https://tn.gov/education/topic/career-clusters>.

Career Cluster	Consultant	Email	Phone
Advanced Manufacturing	Deborah Knoll	<a href="mailto:Deborah.Knoll@tn.gov">Deborah.Knoll@tn.gov</a>	(615) 532-2844
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Arts, Audio/Visual Technology, & Communications	Candi Norwood	<a href="mailto:Candi.Norwood@tn.gov">Candi.Norwood@tn.gov</a>	(615) 532-6248
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Marketing	Anna Ogburn	<a href="mailto:Anna.Ogburn@tn.gov">Anna.Ogburn@tn.gov</a>	(615) 253-7442
Science, Technology, Engineering, & Mathematics (STEM)	Deborah Knoll	<a href="mailto:Deborah.Knoll@tn.gov">Deborah.Knoll@tn.gov</a>	(615) 532-2844
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## Advanced Manufacturing

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Machining Technology</b>	Principles of Manufacturing (5922)	Principles of Machining I (5929)	Principles of Machining II (5923)	Manufacturing Practicum (5926)
<b>Electromechanical Technology</b>	Principles of Manufacturing (5922)	Introduction to Electromechanical (6091)	Advanced Electromechanical Technology (6090)	Manufacturing Practicum (5926)
<b>Mechatronics</b>	Principles of Manufacturing (5922)	Digital Electronics (5925)	Mechatronics I <sup>1</sup> (6156)	Mechatronics II <sup>1</sup> (6157) -or- Manufacturing Practicum (5926)
<b>Welding</b>	Principles of Manufacturing (5922)	Welding I (6078)	Welding II <sup>2</sup> (6033)	Manufacturing Practicum (5926)

<sup>1</sup> Local dual credit and/or dual enrollment opportunities exist for this course.

<sup>2</sup> May be taught for 1 or 2 credits.

**Available courses for elective credit in this cluster:** *Project Lead the Way (PLTW)* courses aligned to manufacturing (see page 16 for list of courses), *Robotics & Automated Systems (6143)*, *Work-Based Learning: Career Practicum (6105)*, Advanced Manufacturing dual enrollment courses: *Dual Enrollment Advanced Manufacturing (4059)*, *Dual Enrollment Machining Technology (4060)*, *Dual Enrollment Electromechanical Technology (4061)*, *Dual Enrollment Welding (4062)*, and *Dual Enrollment Mechatronics (4063)*

## Agriculture, Food, & Natural Resources

Program of Study	Level 1	Level 2	Level 3	Level 4
Veterinary and Animal Science	Agriscience <sup>1</sup> (5957)	Small Animal Science (5958)	Large Animal Science (6116)	Veterinary Science <sup>1</sup> (5961) -and/or- Work-Based Learning (6105)
	Supervised Agricultural Experience (5964)			
Agricultural Engineering and Applied Technologies	Agriscience <sup>1</sup> (5957)	Principles of Agricultural Mechanics (5944)	Agricultural Power and Equipment (5945)	Agricultural and Biosystems Engineering <sup>4</sup> (5963)
	Supervised Agricultural Experience (5964)			
Agribusiness	Agriscience <sup>1</sup> (5957)	Principles of Agribusiness (5946)	Organizational Leadership and Communications <sup>4</sup> (5956)	Agricultural Business and Finance <sup>2,3</sup> (5943)
	Supervised Agricultural Experience (5964)			
Food Science	Agriscience <sup>1</sup> (5957)	Principles of Food Production (6118)	Food Science and Safety (6115)	Advanced Food Science (6113)
	Supervised Agricultural Experience (5964)			
Horticulture Science	Agriscience <sup>1</sup> (5957)	Principles of Plant Science and Hydroculture (6119)	Greenhouse Management <sup>3</sup> (5954)	Landscaping and Turf Science (5951)
	Supervised Agricultural Experience (5964)			
Environmental and Natural Resource Management	Agriscience <sup>1</sup> (5957)	Applied Environmental Science <sup>1</sup> (6114)	Plant and Soil Science <sup>4</sup> (5950)	Natural Resources Management (6117) -and/or- AP Environmental Science (3236)
	Supervised Agricultural Experience (5964)			

<sup>1</sup> Satisfies one lab science credit required for graduation. <sup>2</sup> Satisfies ½ credit of Personal Finance required for graduation.

<sup>3</sup> State approved dual credit course. <sup>4</sup> Local dual credit and/or dual enrollment opportunities exist for this course.

**Available courses for elective credit in this cluster:** *Introduction to Geographic Information Systems (GIS) (6142), IGCSE Environmental Management (4254), AICE Environmental Management AS Level (4255), Work-Based Learning: Career Practicum (6105), Agriculture, Food, & Natural Resources dual enrollment courses: Dual Enrollment Agriculture, Food, & Natural Resources (4064), Dual Enrollment Veterinary & Animal Science (4065), Dual Enrollment Agricultural Engineering & Applied Technologies (4066), Dual Enrollment Agribusiness (4067), Dual Enrollment Food Science (4068), Dual Enrollment Horticulture Science (4069), and Dual Enrollment Environmental & Natural Resources Management (4070).*

## Architecture & Construction

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Residential &amp; Commercial Construction</b>	Fundamentals of Construction (6073)	Residential & Commercial Construction I (6162)	Residential & Commercial Construction II <sup>1</sup> (6163)	Construction Practicum (6160)
<b>Structural Systems</b>	Fundamentals of Construction (6073)	Structural Systems I (6164)	Structural Systems II <sup>1</sup> (6165)	Construction Practicum (6160)
<b>Mechanical, Electrical, &amp; Plumbing (MEP) Systems</b>	Fundamentals of Construction (6073)	MEP Systems (6161)	HVAC (6077) -and/or- Electrical Systems (6075) -and/or- Plumbing Systems (6082)	Construction Practicum (6160)
<b>Architectural &amp; Engineering Design</b>	Architectural & Engineering Design I (6037)	Architectural & Engineering Design II (6039)	Architectural & Engineering Design III <sup>1</sup> (5927)	Engineering Practicum (6141) -or- AP Calculus (3127, 3139, or 3128) -or- AP Physics (3238, 3239, 3234, or 3240)
<b>Interior Design</b>	Foundations of Interior Design (6014)	Residential Interior Design (6006)	Commercial Interior Design (6122)	Advanced Interior Design (6121)

<sup>1</sup> May be taught for 1 or 2 credits.

**Available courses for elective credit in this cluster:** *Introduction to Geographic Information Systems (GIS) (6142), Welding I (6078), Work-Based Learning: Career Practicum (6105), Architecture & Construction dual enrollment courses: Dual Enrollment Architecture & Construction (4071), Dual Enrollment Residential & Commercial Construction (4072), Dual Enrollment Structural Systems (4073), Dual Enrollment Mechanical, Electrical, & Plumbing Systems (4074), Dual Enrollment Architectural & Engineering Design (4075), and Dual Enrollment Interior Design (4076).*

## Arts, Audio/Visual Technology, & Communications

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Digital Arts &amp; Design</b>	Digital Arts & Design I (6084)	Digital Arts & Design II (6086)	Digital Arts & Design III (6087)	Applied Arts Practicum (6158) -and/or- AP Studio Art: 2-D Design (3545)
<b>Audio/Visual Production</b>	A/V Production I (6049)	A/V Production II (6050)	A/V Production III (6083)	Applied Arts Practicum (6158) -and/or- AP English Language and Composition (3013)
<b>Fashion Design</b>	Visual Art I (3501)	Foundations of Fashion Design (6120)	Fashion Design (6008)	Advanced Fashion Design (6009)

### Available courses for elective credit in this cluster:

- In Audio/Visual Production POS: *Journalism (3008)*,
- In Fashion Design POS: *IGCSE Art and Design: Textile Design(4241)*, *AICE Art and Design: Textile Design AS Level (4242)*, *AICE Art and Design: Textile Design A Level (4243)*, *AICE Art and Design: Fashion & Design AS Level (4244)*, *AICE Art and Design: Textiles AS Level (4245)*
- In all programs of study: *Work-Based Learning: Career Practicum (6105)*, Arts, Audio/Visual Technology, & Communications dual enrollment courses: *Dual Enrollment Art, Audio/Visual Technology, & Communications (4077)*, *Dual Enrollment Arts & Design (4078)*, *Dual Enrollment Audio/Visual Production (4079)*, and *Dual Enrollment Fashion Design (4080)*.

## Business Management & Administration

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Business Management</b>	Introduction to Business & Marketing (5905)	Business Communications (5888) -and/or- Accounting I (5910)	Business Management (5889)	Business & Entrepreneurship Practicum (6159) -and/or- Virtual Enterprise International <sup>1</sup> (5900)
<b>Office Management</b>	Computer Applications (5891)	Business Communications (5888)	Business Management (5889)	Advanced Computer Applications (5904)
<b>Health Services Administration</b>	Introduction to Business & Marketing (5905)	Health Science Education (5998)	Health Information Technology (5997)	Business & Entrepreneurship Practicum (6159) -and/or- Virtual Enterprise International <sup>1</sup> (5900)

<sup>1</sup> Satisfies ½ credit of Economics required for graduation.

**Available courses for elective credit in this cluster:** *American Business Legal Systems (5892), Business Economics (5898), IGCSE Business Studies (4259), AICE Business Studies 1 AS Level (4260), AICE Business Studies 2 A Level (4261), Work-Based Learning: Career Practicum (6105), Business Management & Administration dual enrollment courses: Dual Enrollment Business Management & Administration (4081), Dual Enrollment Business Management (4082), Dual Enrollment Office Management (4083), and Dual Enrollment Health Services Administration (4084).*

## Education & Training

Program of Study	Level 1	Level 2	Level 3	Level 4
Teaching as a Profession (K-12)	Fundamentals of Education (6123)	Teaching as a Profession I (6010)	Teaching as a Profession II (6125)	Teaching as a Profession III (6126)
Early Childhood Education (Pre-K-4)	Fundamentals of Education (6123)	Early Childhood Education Careers II (6016)	Teaching as a Profession II (6125)	Teaching as a Profession III (6126)
Educational Support Careers	Fundamentals of Education (6123)	Teaching as a Profession I (6010)	School Counseling (6124)	Teaching as a Profession III (6126)

**Available courses for elective credit in this cluster:** *Lifespan Development (6013), Work-Based Learning: Career Practicum (6105), Education & Training dual enrollment courses: Dual Enrollment Education & Training (4085), Dual Enrollment Teaching as a Profession (K-12) (4086), Dual Enrollment Early Childhood Education (4087), and Dual Enrollment Educational Support Careers (4088).*

## Finance

Program of Study	Level 1	Level 2	Level 3	Level 4
Accounting	Introduction to Business & Marketing (5905)	Accounting I (5910)	Accounting II (5911)	Statistics (3136) -or- AP Statistics (3129)
Banking and Finance	Introduction to Business & Marketing (5905)	Accounting I (5910)	Banking and Finance (5899)	Financial Planning (5890)

**Available courses for elective credit in this cluster:** *Personal Finance (5901), Work-Based Learning: Career Practicum (6105), IGCSE Accounting (4238), AICE Accounting 1 AS Level (4239), AICE Accounting 2 A Level (4240), Finance dual enrollment courses: Dual Enrollment Finance (4089), Dual Enrollment Accounting (4090), and Dual Enrollment Banking & Finance (4091).*

## Government & Public Administration

Program of Study	Level 1	Level 2	Level 3	Level 4
Public Management and Administration	Principles of Public Service (6127)	Public Management and Administration (6129)	U.S. Government and Civics <sup>1</sup> (3417)	Public Law and Budgeting (6128)

<sup>1</sup> Satisfies ½ credit of U.S. Government required for graduation.

**Available courses for elective credit in this cluster:** *Court Systems and Practices (6150)*, *Work-Based Learning: Career Practicum (6105)*, Government & Public Administration dual enrollment courses: *Dual Enrollment Government & Public Administration (4092)* and *Dual Enrollment Public Management & Administration (4093)*.

## Health Science

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Biotechnology Research</b>	Health Science Education (5998)	Diagnostic Medicine (5994)	Anatomy and Physiology <sup>2</sup> (3251 or 5991)	Biomedical Applications <sup>2</sup> (5992) -and/or- Forensic Science <sup>2</sup> (5996)
<b>Public Health</b>	Health Science Education (optional) (5998)	Emergency Preparedness (6151)	Behavioral and Community Health (6130)	Global Health and Epidemiology (6132)
<b>Diagnostic Services</b>	Health Science Education (5998)	Diagnostic Medicine (5994)	Anatomy and Physiology <sup>2</sup> (3251 or 5991) -and/or- Medical Terminology <sup>1</sup> (5883)	Cardiovascular Services (6131) -and/or- Clinical Internship (5993)
<b>Health Informatics</b>	Health Science Education (5998)	Medical Terminology <sup>1</sup> (5883)	Health Information Technology (5997)	Clinical Internship (5993)
<b>Therapeutic Nursing Services</b>	Health Science Education (5998)	Medical Therapeutics (5999)	Anatomy and Physiology <sup>2</sup> (3251 or 5991) -and/or- Medical Terminology <sup>1</sup> (5883)	Nursing Education (6000)
<b>Emergency Services</b>	Health Science Education (5998)	Emergency Preparedness (6151)	Anatomy and Physiology <sup>2</sup> (3251 or 5991) -and/or- Medical Terminology <sup>1</sup> (5883)	Emergency Medical Services <sup>1</sup> (5995)
<b>Therapeutic Clinical Services</b>	Health Science Education (5998)	Medical Therapeutics (5999)	Rehabilitation Careers (5990) -or- Dental Science (6134) -or- Pharmacological Science (6133) -or- Nutrition Science and Diet Therapy <sup>2</sup> (6007)	Anatomy and Physiology <sup>2</sup> (3251 or 5991) -and/or- Clinical Internship (5993)
<b>Clinical Exercise Physiology</b>	Health Science Education (5998)	Rehabilitation Careers (5990)	Exercise Science (6170)	Anatomy and Physiology <sup>2</sup> (3251 or 5991) -and/or- Clinical Internship (5993)

<sup>1</sup> Local dual credit and/or dual enrollment opportunities exist for this course. <sup>2</sup> Satisfies one lab science credit for graduation.

**Available courses for elective credit in this cluster:** *Work-Based Learning: Career Practicum (6105)*, Health Science dual enrollment courses: *Health Science (4094)*, *Biotechnology Research (4095)*, *Public Health (4096)*, *Diagnostic Services (4097)*, *Health Informatics*

(4098), *Therapeutic Nursing Services* (4099), *Emergency Services* (4100), *Therapeutic Clinical Services* (4101), and *Exercise Physiology* (4102).

## Hospitality & Tourism

Program of Study	Level 1	Level 2	Level 3	Level 4
Culinary Arts	Culinary Arts I (5979)	Culinary Arts II (5980)	Culinary Arts III (5981)	Culinary Arts IV (6167)
Hospitality and Tourism Management	Hospitality & Tourism Exploration (5933)	Hospitality Marketing (6169)	Hospitality Management (5940)	Event Planning & Management (6168) -or- Advertising and Public Relations (5936)

**Available courses for elective credit in this cluster:** *IGCSE Travel and Tourism (4262), AICE Travel and Tourism 1 AS Level (4263), AICE Travel and Tourism 2 A Level (4264), Work-Based Learning: Career Practicum (6105), Hospitality & Tourism dual enrollment courses: Dual Enrollment Hospitality & Tourism (4103), Dual Enrollment Culinary Arts (4104), and Dual Enrollment Hospitality & Tourism Management (4105).*

## Human Services

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Childhood Development Services</b>	Early Childhood Education Careers I (6015)	Early Childhood Education Careers II (6016)	Early Childhood Education Careers III (6017)	Early Childhood Education Careers IV (6135)
<b>Social Health Services</b>	Introduction to Human Studies (6137)	Lifespan Development (6013)	Family Studies (6136)	Human Services Practicum (6138) -and/or- Psychology (3433) -and/or- Sociology (3432)
<b>Dietetics and Nutrition</b>	Introduction to Human Studies (6137)	Nutrition Across the Lifespan (6005)	Nutrition Science and Diet Therapy <sup>2</sup> (6007)	Human Services Practicum (6138) -and/or- Psychology (3433) -and/or- Sociology (3432)
<b>Cosmetology</b>	Principles of Cosmetology (5983)	Design Principles of Cosmetology (5986)	Chemistry of Cosmetology (5984)	Entrepreneurship <sup>1</sup> (5934)
<b>Barbering</b>	Barbering I (5972)	Barbering II (5973)	Barbering III (5974)	Entrepreneurship <sup>1</sup> (5934)

<sup>1</sup> Satisfies ½ credit of Economics required for graduation.

<sup>2</sup> Satisfies one lab science credit required for graduation.

**Available courses for elective credit in this cluster:** *Work-Based Learning: Career Practicum (6105), IGCSE Child Development (4237), AICE Food Studies 1 A Level (4256), AICE Food Studies 2 A Level (4257), IGCSE Food & Nutrition (4258), Human Services dual enrollment courses: Dual Enrollment Human Services (4106), Dual Enrollment Childhood Development Services (4107), Dual Enrollment Social Health Services (4108), Dual Enrollment Dietetics & Nutrition (4109), Dual Enrollment Cosmetology (4110), and Dual Enrollment Barbering (4111).*

## Information Technology

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Programming &amp; Software Development</b>	Information Technology Foundations (6095)	Programming and Logic I (6098)	Programming and Logic II (6099)	Programming & Software Development Practicum (5908) -and/or- AP Computer Science (3635) -and/or- AP Computer Science Principles (3634)
<b>Networking Systems</b>	Information Technology Foundations (6095)	Computer Systems (6094)	Networking (6097)	Cabling and Internetworking (6093) -and/or- IT Clinical Internship (6096)
<b>Web Design</b>	Information Technology Foundations (6095)	Web Design Foundations (6100)	Web Site Development (6101)	Web Design Practicum (6171) -and/or- AP Computer Science (3635) -and/or- AP Computer Science Principles (3634)

**Available courses for elective credit in this cluster:** *Introduction to Geographic Information Systems (GIS) (6142), IGCSE Computer Studies (4246), AICE Computing 1 AS Level (4247), AICE Computing 2 A Level (4248), AICE Applied ICT 1 AS Level (4249), AICE Applied ICT 2 A Level (4250), Work-Based Learning: Career Practicum (6105), Information Technology dual enrollment courses: Dual Enrollment Information Technology (4112), Dual Enrollment Programming & Software Development (4113), Dual Enrollment Networking Systems (4114), and Dual Enrollment Web Design (4115).*

## Law, Public Safety, Corrections, & Security

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Law Enforcement Services</b>	Principles of Law, Corrections, and Security (6155)	Criminal Justice I (5987)	Criminal Justice II (5988)	Criminal Justice III: Investigation (5989)
<b>Fire Management Services</b>	Principles of Fire and Emergency Services (6154)	Fire Prevention (course code TBA)	Fire Science I (6152)	Fire Science II (6153) -and/or- Emergency Medical Services <sup>2</sup> (5995)
<b>Legal and Correction Services</b>	Principles of Law, Corrections, and Security (6155)	Criminal Justice I (5987)	U.S. Government and Civics <sup>1</sup> (3417)	Court Systems and Practices (6150)

<sup>1</sup> Satisfies ½ credit of U.S. Government required for graduation.

<sup>2</sup> Local dual credit and/or dual enrollment opportunities exist for this course.

**Available courses for elective credit in this cluster:** *American Business Legal Systems (5892), Work-Based Learning: Career Practicum (6105), Law, Public Safety, Corrections, & Security dual enrollment courses: Dual Enrollment Law, Public Safety, Corrections & Security (4116), Dual Enrollment Law Enforcement Services (4117), Dual Enrollment Fire Management Services (4118), and Dual Enrollment Legal & Correction Services (4119).*

## Marketing

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Marketing Management</b>	Introduction to Business & Marketing (5905)	Marketing and Management I: Principles <sup>1</sup> (5931)	Marketing and Management II: Advanced Strategies (5932)	Advertising and Public Relations (5936) -or- Retail Operations <sup>1</sup> (5938) -or- Event Planning & Management (6168)
<b>Entrepreneurship</b>	Introduction to Business & Marketing (5905)	Marketing and Management I: Principles <sup>1</sup> (5931)	Entrepreneurship <sup>1</sup> (5934)	Business & Entrepreneurship Practicum (6159) -or- Virtual Enterprise International <sup>1</sup> (5900)

<sup>1</sup> Satisfies ½ credit of Economics required for graduation.

**Available courses for elective credit in this cluster:** *Business Communications (5888), Work-Based Learning: Career Practicum (6105), Marketing dual enrollment courses: Dual Enrollment Marketing (4120), Dual Enrollment Marketing Management (4121), and Dual Enrollment Entrepreneurship (4122).*

## STEM

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Engineering</b>	Principles of Engineering and Technology (5924)	Engineering Design I (6139)	Engineering Design II (6140)	Engineering Practicum (6141) -and/or- AP Physics (3238, 3239, 3234, or 3240)
<b>Technology</b>	Principles of Engineering and Technology (5924)	Digital Electronics (5925)	Robotics & Automated Systems (6143)	Engineering Practicum (6141) -and/or- AP Physics (3238, 3239, 3234, or 3240)
<b>STEM Education</b>	STEM I: Foundation (6144)	STEM II: Applications (6145)	STEM III: STEM in Context (6146)	STEM IV: STEM Practicum (6147)
<b>Project Lead the Way</b>	Introduction to Engineering (PLTW) (6054)	Principles of Engineering (PLTW) (6052)	Choice of the following: Aerospace Engineering (PLTW) (6057) Civil Engineering & Architecture (PLTW) (6056) Biotechnical Engineering (PLTW) (6058) Digital Electronics (PLTW) (6053) Computer Integrated Manufacturing (PLTW) (6055)	Engineering Design and Development (PLTW) (6059)
<b>Engineering by Design</b>	Foundations of Technology (EBD) (5917)	Technological Design (EBD) (5885)	Advanced Design Applications (EBD) (5920) -and/or- Advanced Technological Applications (EBD) (5919)	Engineering Design (EBD) (5921)

Note: Courses marked (EBD) are part of the *Engineering by Design* curriculum package and may require additional costs and training to implement. Courses marked (PLTW) are part of the *Project Lead the Way* curriculum package and may require additional costs and training to implement.

**Available courses for elective credit in this cluster:** *Introduction to Geographic Information Systems (GIS) (6142), Principles of Technology I (5886), Principles of Technology II (5887), IGCSE Design and Technology (4251), AICE Design & Technology 1 AS Level (4252), AICE Design & Technology 2 A Level (4253), Work-Based Learning: Career Practicum (6105), STEM dual enrollment courses: Dual Enrollment STEM (4123), Dual Enrollment Engineering (4124), Dual Enrollment Technology (4125), and STEM Education (4126).*

## Transportation, Distribution, & Logistics

Program of Study	Level 1	Level 2	Level 3	Level 4
<b>Automotive Maintenance and Light Repair</b>	Maintenance and Light Repair I (5879)	Maintenance and Light Repair II (5880)	Maintenance and Light Repair III (5881)	Maintenance and Light Repair IV (5882)
<b>Automotive Collision Repair</b>	Introduction to Collision Repair (6172)	Collision Repair: Non-Structural <sup>1</sup> (6062) -or- Collision Repair: Painting & Refinishing <sup>1</sup> (6063)	Collision Repair: Non-Structural <sup>1</sup> (6062) -or- Collision Repair: Painting & Refinishing <sup>1</sup> (6063)	Collision Repair: Non-Structural <sup>1</sup> (6062) -or- Collision Repair: Painting & Refinishing <sup>1</sup> (6063) -or- Collision Repair: Damage Analysis, Estimating, & Customer Service (6149)
<b>Aviation Flight</b>	Introduction to Aerospace (6068)	Aviation I: Principles of Flight (6070)	Aviation II: Advanced Flight (6148)	
<b>Distribution and Logistics</b>	Foundations of Transportation, Distribution, and Logistics (6069)	Distribution and Logistics I (6072)	Distribution and Logistics II: Management (6024)	

<sup>1</sup> May be taught for up to 3 credits. Implementation options vary; contact the career cluster consultant for more information.

**Available courses for elective credit in this cluster:** *Welding I (6078), Welding II (6033), Work-Based Learning: Career Practicum (6105), Transportation, Distribution, & Logistics dual enrollment courses: Dual Enrollment Transportation, Distribution, & Logistics (4127), Dual Enrollment Automotive Maintenance & Light Repair (4128), Dual Enrollment Automotive & Collision Repair (4129), Dual Enrollment Aviation Flight (4130), Dual Enrollment Aviation Maintenance (4131), Dual Enrollment Distribution & Logistics (4132), Dual Enrollment Diesel Technology (4133), and Dual Enrollment 2-4 Cycle Engines (4134). Collision Repair: Structural (6064) may be taken at a participating postsecondary institution as a third- or fourth-level course.*

## Middle School

Career Cluster(s)	6 <sup>th</sup> Grade	7 <sup>th</sup> Grade	8 <sup>th</sup> Grade
<ul style="list-style-type: none"> <li>Agriculture, Food, &amp; Natural Resources</li> </ul>		Introduction to Agricultural Sciences (0885)	Introduction to Agricultural Sciences (0885) Career Exploration* (6166)
<ul style="list-style-type: none"> <li>Arts, A/V Technology, &amp; Communications</li> <li>Business Management &amp; Administration</li> <li>Finance</li> <li>Information Technology</li> <li>Marketing</li> </ul>	Keyboarding <sup>1</sup> (0610)	Keyboarding (0710)	Keyboarding (0810) Computer Applications (5891 or 3638) Career Exploration* (6166)
<ul style="list-style-type: none"> <li>Education &amp; Training</li> <li>Human Services</li> </ul>	Introduction to Social Health <sup>2</sup> (0562)	Introduction to Social Health (0562)	Introduction to Social Health (0562) Career Exploration* (6166)
<ul style="list-style-type: none"> <li>Advanced Manufacturing</li> <li>Architecture &amp; Construction</li> <li>STEM</li> <li>Transportation, Distribution, &amp; Logistics</li> </ul>	Exploring Technology (EBD) (6047)	Inventions and Innovations (EBD) (0782)	Technological Systems (EBD) (0882) Career Exploration* (6166)
<ul style="list-style-type: none"> <li>Advanced Manufacturing</li> <li>Architecture &amp; Construction</li> <li>Information Technology</li> <li>STEM</li> <li>Transportation, Distribution, &amp; Logistics</li> </ul>	STEM Explorers (0649)	STEM Innovators (0749)	STEM Designers (0849) Career Exploration* (6166)
<ul style="list-style-type: none"> <li>Health Science</li> </ul>		Introduction to Health Science (0837)	Introduction to Health Science (0837) Medical Detectives (PLTW) (0890) Career Exploration* (6166)
<ul style="list-style-type: none"> <li>Advanced Manufacturing</li> <li>Architecture &amp; Construction</li> <li>Arts, A/V Technology, &amp; Communications</li> <li>Information Technology</li> <li>STEM</li> <li>Transportation, Distribution, &amp; Logistics</li> </ul>	Design and Modeling (PLTW) (0783)	Automation and Robotics (PLTW) (0883)	Energy and the Environment (PLTW) (0886) Flight and Space (PLTW) (0887) Green Architecture (PLTW) (0888) Magic of Electrons (PLTW) (0889) Science and Technology (PLTW) (0891) Career Exploration* (6166)

<sup>1</sup> Keyboarding may also be used with 4<sup>th</sup> and 5<sup>th</sup> grade students (0410, 0510).

<sup>2</sup> Introduction to Social Health may also be used with 5<sup>th</sup> grade students (0562).

Note: Courses marked (EBD) are part of the *Engineering by Design* curriculum package and may require additional costs and training to implement. Courses marked (PLTW) are part of the *Project Lead the Way* curriculum package and may require additional costs and training to implement.

\*The *Career Exploration* course will be available to orient 8<sup>th</sup> and 9<sup>th</sup> grade students to high school, postsecondary, and career options and develop 21<sup>st</sup> century skills. This course can serve as a prerequisite for any CTE course and program of study; however it is not a required part of any program of study and should not be counted toward CTE concentrator status.