

Inspiring and Empowering Students



2019-20
College, Career and Technical Education (CCTE)
Programs of Study Guide

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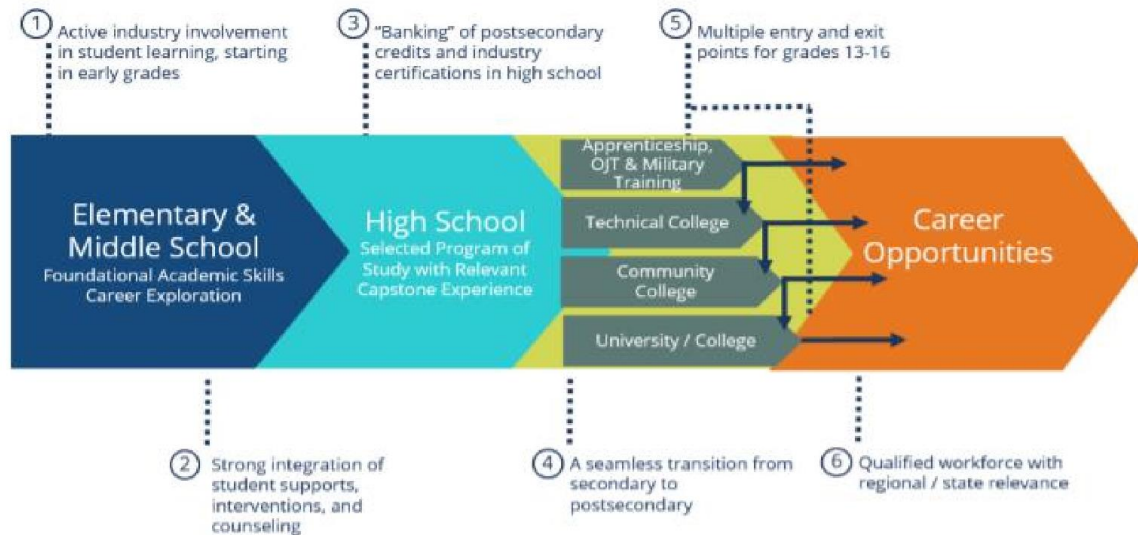
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OVERVIEW

Introduction

Tennessee students have an unprecedented opportunity to prepare for entry into the workforce with education and training beyond high school through the Tennessee Promise. Tennessee is committed to expanding the number of high school students earning early postsecondary course credits and industry certifications and to broadening the reach of these opportunities to include students who lacked access in the past. Today's cutting-edge, rigorous and relevant College, Career and Technical Education (CCTE) begins as early as elementary school preparing youth and adults for a wide range of high-wage, high-skill, high-demand careers. The CCTE framework includes career clusters and within each cluster are Programs of Study that align with industry groupings of occupations with similar domain knowledge requirements.



Career Cluster (CC) versus Programs of Study (POS)

There are currently 16 CC's as defined by the state that represent broad categories of occupations and broad industries based on commonalities. Expectations at the pathway level represent the skills and knowledge, both academic and technical, necessary to pursue a full range of career opportunities within a pathway— ranging from entry level to management, including technical and professional career specialties.

POS's are meant to provide relevant framework of industry-aligned, rigorous courses that progress a student in knowledge and skills year after year. They provide invaluable opportunities for students to experience a subject they are passionate about and explore interests that lead to a postsecondary learning and future career paths. These sequenced courses also reflect and support the three-credit EFA requirement for graduation. For a full list of all the CC's and POS's endorsed by the Tennessee State Board of Education visit <https://www.tn.gov/education/career-and-technical-education/career-clusters.html>

CCTE Concentrator

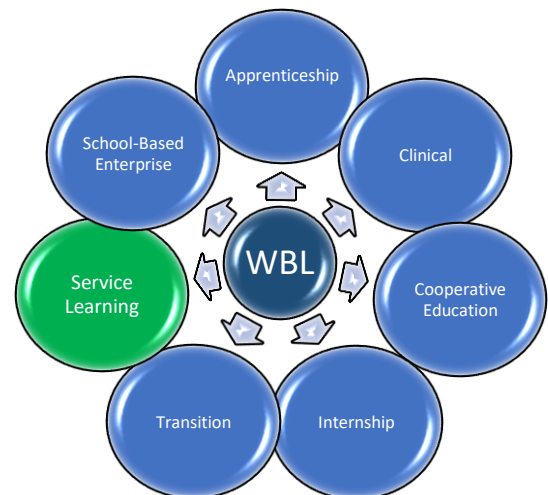
Effective in the 2018-19 school year, the definition of a student who concentrates (or has a focus of study) in CCTE was updated. The revised definition requires that a student who concentrates in CCTE must earn three or more credits within one program of study only. These course sequences are structured to build upon the knowledge and skills obtained from one course to the next. This Career Programs of Study Guide (POS) lists the programs of study offered in each career cluster in the Macon County school district. **Note, completing three sequenced credits within one program of study also meets the student Elective Focus Area (EFA) graduation requirement.**

Elective Focus Area (EFA)

An EFA is a graduation requirement designed to help better prepare students for college and the workforce. The requirement is to take three course credits in one of focus areas that the Macon County schools offers. In addition to Career and Technical Education Programs of Study included in this guide, the following elective focus areas offered are Math and Science, Fine Arts, or Humanities. An EFA is similar to choosing a major in college and should be based upon career interest, ability and career goals. Courses within an EFA generally are sequenced and some may require pre-requisites. Rising Freshmen are required to select an EFA, but this may be changed in subsequent years. If the POS offerings within this document do not align with desired career goals, students should work with the Career Coach or School Counselor to determine the most appropriate plan that will align career goals and meet the Tennessee EFA graduation requirement.

Experiential Learning Opportunities

Experiential learning is the process of learning through experience. Macon County Schools offer Work Based Learning and Service Learning to give students an opportunity to tailor the work experience. Approved Work Based Learning (WBL) arrangements options listed below can be used to meet level three or four in a program of study. Both WBL and Service Learning qualify as elective credit towards graduation requirements.



- **Work Based Learning (WBL)**

WBL offers an opportunity for practical experiential learning in a career area and may be paid or unpaid experiences. All WBL options, **other than Service Learning**, may be substituted for a Level 3 or 4 course in any POS and complete a student's elective focus with prior approval. The following experiences may be offered for high school credit when WBL course standards are met. WBL classes allow students to earn high school credit for select work-based learning experiences when they meet the course standards. These experiences allow students to interact with industry professionals in order to extend and deepen classroom work and support the development of postsecondary and career readiness knowledge and skills. Through the Career Practicum course, teachers

may facilitate various forms of WBL experiences which are differentiated to meet the needs of the individual student and aligned with course standards. These experiences may be offered at the discretion of the LEA:

- **Cooperative Education (Co-op)**

Co-op is a structured method of instruction whereby students coordinate their studies with a paid job in a field related to their academic or career and technical education course. Instruction is based on written learning and safety training plans agreed to by the school and employer. Students may receive credit through the Career Practicum course when they meet the course standards through a combination of classroom-based and work-based experiences. Placements are dependent on the student's goals and high school Plan of Study.

- **Health Science Clinicals**

Health Science Clinicals are school-based or work-based placements in the health science area in which students are taught academic and occupational skills from school or employee instructors who supervise and evaluate their work. Students successfully completing a clinical experience program may qualify for industry certification and/or receive credits that may be applied toward a professional degree. Students may receive credit through the Clinical Internship or Nursing Education course when they meet the course standards through a combination of classroom-based and work-based experiences. Placements are dependent on the student's goals and their aligned CCTE program of study.

- **Internships**

Internships enable students to work for an employer for a limited period to learn about a particular industry or occupation. These experiences are intended to provide students with a learning opportunity of value to the student. Internships are closely defined by the Fair Labor Standards Act and may be unpaid when it is clear that the experience is an extension of the students learning. All federal laws apply to Tennessee internships. Students may receive credit through the Career Practicum course when they meet the course standards through a combination of classroom-based and work-based experiences. Placements are dependent on the student's goals and high school Program of Study.

- **School-Based Enterprise**

School-based Enterprise is an experience in which students, as part of their school program, produce goods and services. School-based enterprises involve students in the management of a business that may involve the sale of goods for use by others. They involve students in all aspects of the business to the extent practical. They may be conducted on or off the school site but must be a part of the student's regular school program. Examples of school-based enterprises include a greenhouse nursery managed by an agriculture class, a bookstore managed by an entrepreneurship class, or a school day-care managed by an education and training

class. School-based enterprise may be used as an embedded strategy or as a credit bearing experience when the student is enrolled in the Career Practicum course and meets the course standards. Placements are dependent on the student's goals and high school Plan of Study.

- **Service-Learning**

Service Learning combines community service with a structured school-based opportunity for reflection about that service, emphasizing the connections between service experiences and academic learning. Students benefit by acquiring skills and knowledge, realizing personal satisfaction and learning civic responsibility. The community also benefits by having a local need addressed. The service-learning strategy may be embedded into other classes in the form of short-term projects. Placements are dependent on the student's goals and high school Plan of Study. Students may receive elective credit through the Service-Learning, however, **Service-Learning does not qualify for credit towards Programs of Study attainment.**

- **Transition Activities (paid or non-paid)**

Transition activities are designed to facilitate community-based instruction, employment experiences and socialization skills for the student with moderate to severe disabilities. The transition WBL method includes both paid and non-paid training activities for both credit and/or completion of the Individualized Education Program (IEP) goals and objectives. Students may receive credit through the WBL: Special Education Transition course when an IEP team determines that another capstone WBL course, such as WBL: Career Practicum, with appropriate accommodations and modifications is not the student's least restrictive environment.

TN Ready Graduate

The "Every Student Succeeds Act" (ESSA) requires reporting of an indicator to predict high school graduate performance in post-secondary training or the workforce. This indicator should represent proficiency beyond academics. The TN Ready Graduate indicator represents a holistic, well-rounded education, and to meet this requirement, students must fulfill at least one of the following criteria:

- Earn a composite score of 21 or higher on the ACT (or 1060 or higher on the SAT)
- Complete four early postsecondary opportunities (EPSOs)
- Complete two EPSOs + earn an industry certification
- Complete two EPSOs + earn a score of military readiness, 31 or higher, on the Armed Services Vocational Aptitude Battery (ASVAB) Armed Forces Qualifying Test (AFQT)

Early Post-Secondary Opportunities (EPSO)

Research has shown that Early Post-Secondary Opportunities (EPSO) **improve the readiness and success rates for students post high school graduation** in the workforce or post-secondary education or training programs.

Early postsecondary opportunities allow students to:

- earn postsecondary credits while in high school.
- become familiar with postsecondary rigor and expectations.
- develop confidence and skills for success in postsecondary learning and workforce.
- make informed postsecondary and career decisions.
- decrease the time and cost of completing a certificate or degree.

Macon County Schools offer students the following opportunities to earn EPSOs:

- Dual enrollment (DE) is a postsecondary course, taught either at the postsecondary institution or at the high school, by postsecondary faculty or credentialed adjunct faculty. **Dual enrollment provides college credit at the school where the course was completed but may also transfer to other colleges.**
- Local dual credit (LDC) is a high school course aligned to a local postsecondary institution's course and exam. **LDC earned college credit is only valid at the college designated.**
- Statewide dual credit (SDC) classes are college-level courses taught at the high-school level by trained high-school teachers. **SDC earned is valid only to state Tennessee colleges.**
- Industry certifications (IC) are earned through secondary and postsecondary career and technical education programs and courses.
- College Level Examination Program (CLEP) exams can be taken to assess mastery of postsecondary-level material acquired in a variety of ways, including through general academic instructions, significant independent study or extracurricular work.



Macon County Schools EPSO Offerings

<u>Macon County Schools</u> <u>Early Post-Secondary Offerings by CTE Program of Study</u>					
CTE Cluster	Program of Study	EPSO DE/LDC/SDC Credit Opportunity	EPSO Industry Certification Credit Opportunity	Offered to Students at	
				MCHS	RBS
ADVANCED MANUFACTURING	Machining Technology	Machining Technology - DE (1 hour/block taken during grade 10, 11 & 12) through TCAT	Machining Level I - Measurement, Materials, and Safety Certification (NIMS) Precision Measurement Instruments Certification	X	X
	Mechatronics	Mechatronics I & II – DE (1 hour/block taken during grade 10, 11 & 12) through TCAT	Level I Siemens Certified Mechatronic Systems Assistant	X	X
	Welding	Welding – DE (1 hour/block taken during grade 10, 11 & 12) through TCAT	AWS SENSE Entry Level Welder AWS SENSE Advanced Level Welder American Welding Society Certified Welder Precision Measurement Instruments Certification	X	X
AGRICULTURE, FOOD, AND NATURAL RESOURCES	Agribusiness	Intro to Ag Business – SDC (AGRI 1010)	OSHA-10	X	
	Agricultural Engineering and Applied Technologies	Ag Engineering - LDC (AGET 2110 @ 3 hours) through Tennessee Tech University	Precision Measurement Instruments Certification	X	
	Horticulture Science	Intro to Plant Science – SDC (AGRI 1030)		X	X

Macon County Schools

Early Post-Secondary Offerings by CTE Program of Study

CTE Cluster	Program of Study	EPSO DE/LDC/SDC Credit Opportunity	EPSO Industry Certification Credit Opportunity	Offered to Students at	
				MCHS	RBS
	Veterinary and Animal Science	Large Animal Science – LDC (ANS 2020 @ 3 hours) through Tennessee Tech University (LDC offered at MCHS only)	Tennessee Specific Industry Certification (TSIC) for Animal Science (Offered at MCHS only)	X	X
ARCHITECTURE & CONSTRUCTION	¹ Residential & Commercial Construction	DE (1 hour/block taken during grade 10, 11 & 12) through TCAT	<ul style="list-style-type: none"> NCCER Core Curriculum NCCER Construction Technology 	X	X
BUSINESS MANAGEMENT & ADMINISTRATION	Business Management	Intro to Business –SDC (BUSN 1305) (SDC offered only at MCHS)		X	X
	Office Management	<p>*Intro to Business – SDC (BUSN 1305) (SDC only offered at MCHS)</p> <p>*Note Required pre-requisite for this class is Intro to Bus & Marketing</p> <p>Advanced Computer Applications – DE (1 hour/block) through TCAT</p>		X	X
EDUCATION & TRAINING	Teaching as a Profession (TAP)	TAP II – LDC (FOED 2011 @ 2 hours) through Tennessee Tech University		X	
HEALTH SERVICES	¹ Nursing Services	DE (1 hour/block taken during grade 11 & 12) through TCAT	Certified Nursing Assistant Certification	X	X
HOSPITALITY & TOURISM	¹ Culinary Arts	DE (1 hour/block taken during grade 10, 11 & 12) through TCAT	ServSafe Food Manager	X	X
HUMAN SERVICES	¹ Cosmetology	DE (1 hour/block taken during grade 10, 11 & 12) through TCAT		X	X

Macon County Schools

Early Post-Secondary Offerings by CTE Program of Study

CTE Cluster	Program of Study	EPSO DE/LDC/SDC Credit Opportunity	EPSO Industry Certification Credit Opportunity	Offered to Students at	
				MCHS	RBS
	Dietetics and Nutrition	Nutrition Across the Lifespan – LDC (HEC 1030 @ 2 hours) through Tennessee Tech University Passing TSIC will also qualify for state dual credit	Tennessee Specific Industry Certification (TSIC) for Dietetics & Nutrition (in pilot and offered only at MCHS)	X	X
	Human & Social Science	Lifespan Development – LDC (HEC 1010 @ 3 hours) through Tennessee Tech University	Tennessee Specific Industry Certification for Human & Social Sciences (in pilot and only offered at MCHS)	X	X
INFORMATION TECHNOLOGY	Web Design		CompTIA IT Fundamentals	X	
SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS (STEM)	Project Lead the Way	Intro to Engineering course – LDC (ENGR 1210 @ 1 hour) through Tennessee Tech University		X	
TRANSPORTATION, DISTRIBUTION, AND LOGISTICS	¹ Automotive Maintenance & Light Repairs	Automotive Maintenance & Light Repair - DE (1 hour/block taken during grade 10, 11 & 12) through TCAT	ASE Student Certification-Maintenance & Light Repair Precision Measurement Instrument Certification	X	X
NON-CCTE	Fine Arts			X	
NON-CCTE	Humanities	Psychology – SDC (SDC only offered at MCHS) Sociology – SDC (SDC only offered at MCHS)		X	X
NON-CCTE	Math & Science	Statistics – SDC (SDC only offered at MCHS)		X	
NON-CCTE	Science				X

¹Offered through partnership with Tennessee College of Applied Technology-Hartsville at the Tri-County Extension Campus.

Non-CCTE Course EPSO Course Offerings	MCHS	RBS
World History-SDC (HIST 1220) ^{1,2}	X	
Intro Sociology-SDC (SOCI 1010) ²	X	
Pre-Calculus-SDC (MATH 1730)¹²	X	
Psychology-SDC (PSYC 1030) ²	X	
U.S. History-SDC (HIST 2020) ^{1, 2}	X	
Dual Enrollment through Volunteer State Community College	X	X
Intro to Probability & Statistics-SDC (MATH 1530) ²	X	

¹Indicates required core course

²Course only offered at MCHS for SDC credit)



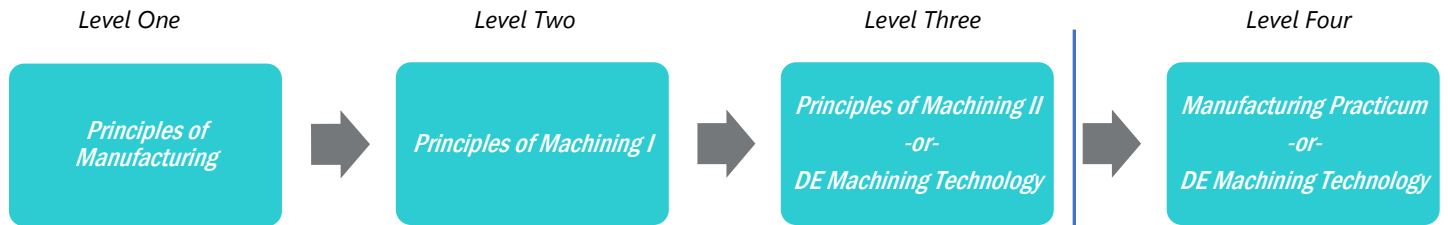
ADVANCED MANUFACTURING



Machining Technology

Offered at TCAT Tri-County Extension Campus

ADVANCED MANUFACTURING



ABOUT THE PROGRAM OF STUDY

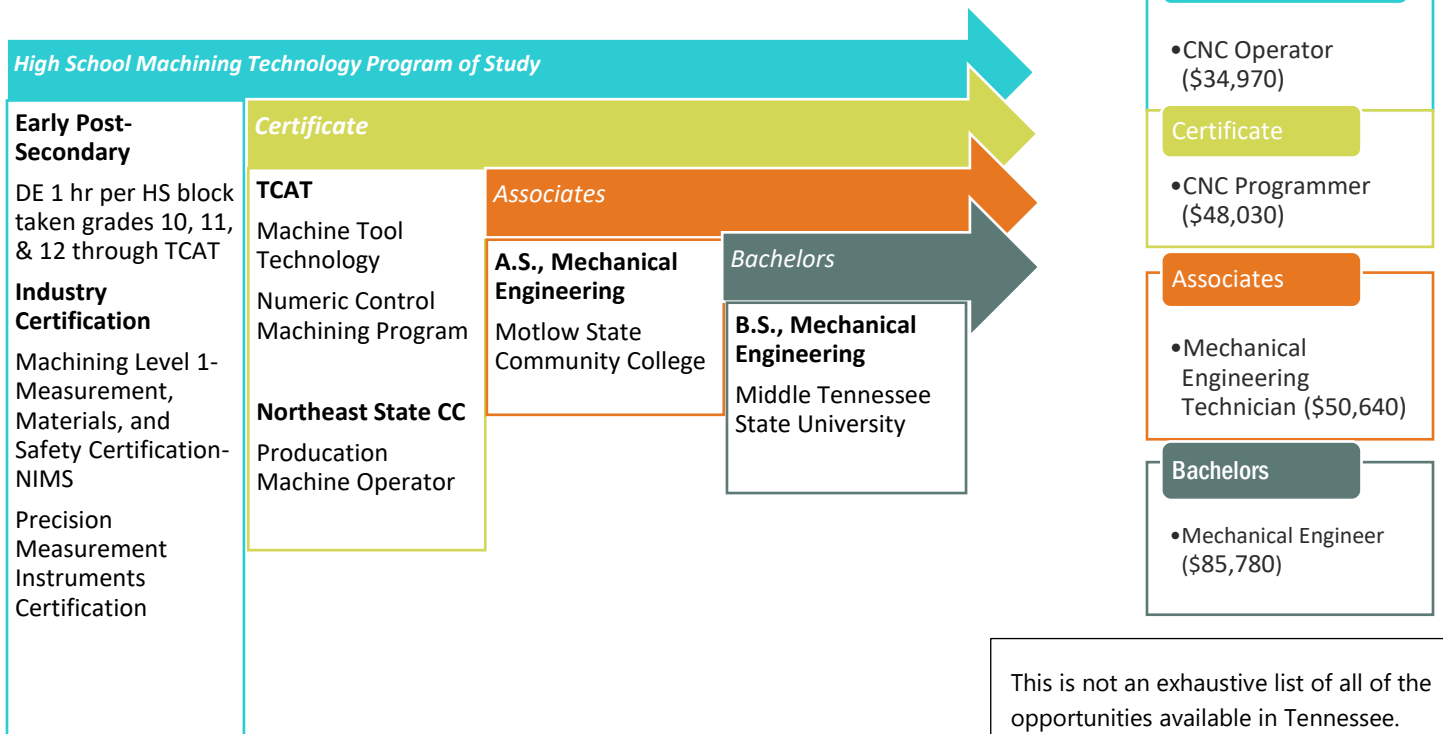
The *Machining Technology* program of study is designed for students interested in becoming a computer-controlled machine tool operator, a CNC machining tool programmer, or a machinist. This program focuses on safety practices concerning: machining technology; proper measurement and layout techniques; reading and interpreting specification drawings and blueprints; production design processes; quality control procedures; machine parts to specifications using both manual and computer-controlled machine tools; and measuring, examining, and testing completed products to check for defects and conformance to specifications. Upon completion of this program, proficient students will be prepared to pursue industry certification at a technology college or more advanced coursework at a two-year or four-year postsecondary institution.

Industry Certifications options include:

- Machining Level I - Measurement, Materials, and Safety Certification (NIMS)
- Precision Measurement Instruments Certification

Dual credit/dual enrollment options include:

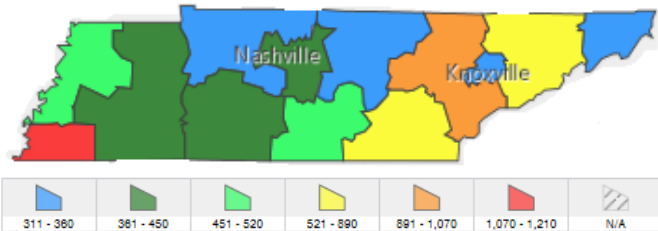
- 1 hour per HS block through TCAT earned during grades 10, 11 & 12.



CAREER OPPORTUNITIES

Machining Technology is the investigation of utilizing distinctive complex machining applications and procedures to help in more astute, more effective item plan and improvement. Engineers will set up and work a mixture of CNC-controlled and mechanically-controlled machine apparatuses to deliver accurate metal parts, instruments, and devices. CNC machines control the cutting apparatus speed that intricately cuts each section. The mechanic decides the cutting path, the velocity of the cut, and the feed rate by programming directions into the CNC machine. Mechanical engineers must have the capacity to utilize both manual and computer controlled apparatus in their occupation

Employment Projections for *Machining Technology* careers in Tennessee



Tennessee Department of Labor and Workforce Development, Job4TN Online. (2017). *Occupational Projections (Long-term)*. Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occpjoi>

POSTSECONDARY OPTIONS

School	Degree Program
Motlow State Community College	Mechanical Engineering Technician
Middle Tennessee State University	Mechanical Engineer

For more college and career planning resources, visit <http://collegefortn.org>.

Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.



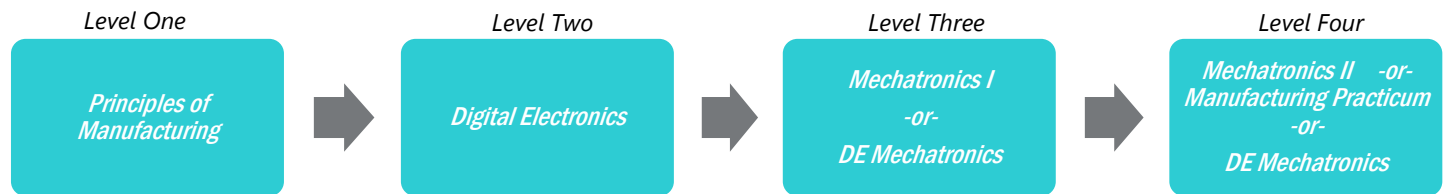
Machining Technology Related Occupations with the most Annual Average Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Total Percent Change
Machinists	8,470	9,960	17.70%
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	500	660	31.70%
Computer-Controlled Machine Tool Operators, Metal and Plastic	2,810	3,720	32.40%



Students in this program of study will be eligible to join SkillsUSA. In addition to school events, students will be able to compete at the regional, state, and national level. SkillsUSA improves the quality of America's skilled workforce through a structured program of citizenship, leadership, employability, technical and professional skills training. SkillsUSA enhances the lives and careers of students, instructors and industry representatives as they strive to be champions at work. See your manufacturing teacher to learn more about SkillsUSA or visit <http://www.skillsusa.org>

ADVANCED MANUFACTURING



ABOUT THE PROGRAM OF STUDY

The *Mechatronics* program of study is designed for students interested in becoming a mechatronics technician, electrical technician, mechanical engineering technician, robotics technician, or mechatronics engineer. Course content focuses on the components of manufacturing systems, collection and analysis of quality data, electronics, mechanics, fluid power systems, computers and control systems, and technical documentation and troubleshooting. Upon completion of this program of study, proficient students will be prepared to pursue industry certification at a technology college or more advanced coursework at a two-year or four-year postsecondary institution.

Industry Certifications options include:

- Level I Siemens Certified Mechatronic Systems Assistant

Dual credit/dual enrollment options include:

- 1 hour per HS block through TCAT earned during grade 10, 11 & 12.

High School Mechatronics Program of Study

Early Post-Secondary
DE 1 hr per HS block taken grades 10, 11, & 12 through TCAT
Industry Certification
Siemens Level 1 Certified Mechatronic Systems Assistant

Certificate

Motlow State Community College
Siemens Level 2 Certified Mechatronics Systems Associate
TCAT
Mechatronics Technology
Roane State CC
Mechatronics
Dyersburg State CC
Mechatronics: Industrial Electricity
Mechatronics: Programmable Logic Controller

Associates

A.S., Mechatronics Technology
Motlow State Community College

Bachelors

B.S., Mechatronics Engineering
Middle Tennessee State University

Career Opportunities

High School Diploma

- Industrial Machining Mechanic (\$46,460)

Certificate

- Industrial Engineering Technician (\$43,530)

Associates

- Manufacturing Engineering Technologist (\$61,810)

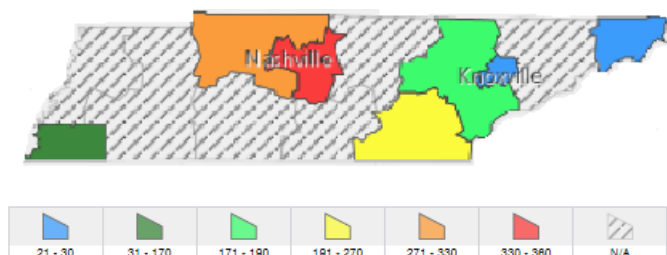
Bachelors

- Mechatronic Engineers (\$82,360)

CAREER OPPORTUNITIES

Mechatronics is the study of complex systems and processes to aid in smarter, more efficient product design and development, particularly within manufacturing environments. Mechatronics systems combine mechanical, electrical, computer, and control systems into a unified process, drawing on principles of industrial engineering and related disciplines to optimize results and minimize defects. Examples of classic mechatronics systems within automotive manufacturing environments include the mobile robots and manipulator arms that operate on assembly lines.

Employment Projections for *Mechatronics* careers in Tennessee



Mechatronics Related Occupations with the most Annual Average Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Total Percent Change
Mechatronic Engineers (Engineers, All Other)	3,020	3,290	8.90%
Industrial Engineer Technicians	1,610	1,680	4.90%
Manufacturing Engineering Technologists	630	660	6.0%

Tennessee Department of Labor and Workforce Development, Job4TN Online. (2017). *Occupational Projections (Long-term)*. Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occpri>

POSTSECONDARY OPTIONS

School	Degree Program
Volunteer State Community College	Manufacturing Engineering Technologist
Middle Tennessee State University	Mechatronic Engineer

For more college and career planning resources, visit <http://collegefortn.org>.

Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT),



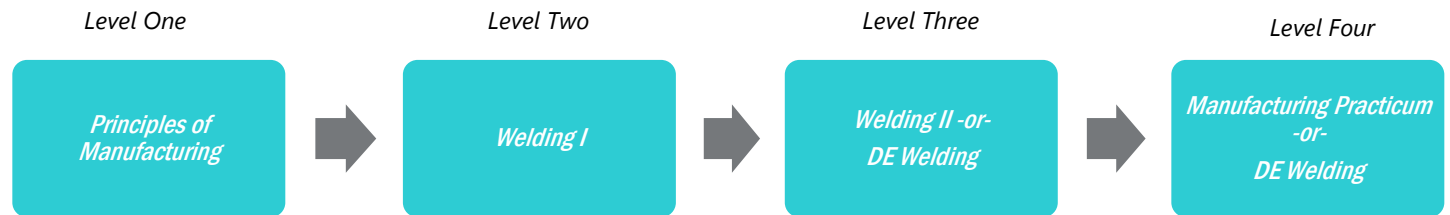
community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.



SkillsUSA

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ADVANCED MANUFACTURING



ABOUT THE PROGRAM OF STUDY

The *Welding* program of study is designed to prepare and certify students as entry-level welders. Students will learn safe practices, career exploration, leadership development, and basic arc welding and thermal cuttings skills. Basic arc welding and thermal cutting skills are developed over a series of two courses which will prepare students for ENTRY LEVEL WELDER Certification, as defined by American Welding Society QC10.

Industry Certifications options include:

- AWS SENSE Entry Level Welder
- AWS SENSE Advanced Level Welder
- American Welding Society Certified Welder
- Precision Measurement Instruments Certification

Dual credit/dual enrollment options include:

- 1 hour per HS block through TCAT earned during grade 10, 11 & 12.

High School Welding Program of Study

Early Post-Secondary

DE 1 hs per HS block taken grades 10, 11, & 12 through TCAT

Industry Certification

Machining Level 1-Measurements, Materials, and Safety Certification

AWS Sense Entry Level Welder

AWS SENSE Level Welder

American Welding society Certified Welder

Precision Measurement Instruments Certification

Certificate

TCAT

Welding, Brazing, & Soldering

Welding

Chattanooga State CC

Advanced Gas Metal Arc Welding

Associates

A.S., Welding

Miller-Motte Technical College

A.S., Welding Engineering Technology

Chattanooga State

Bachelors

B.S., Manufacturing and Engineering Technology

Tennessee State University

Career Opportunities

High School Diploma

- Entry Level Welder (\$37,420)

Certificate

- Combo Welder (\$40,788)

Associates

- Certified Welding Inspector (\$52,000)
- Welding Supervisor (\$41,600)

Bachelors

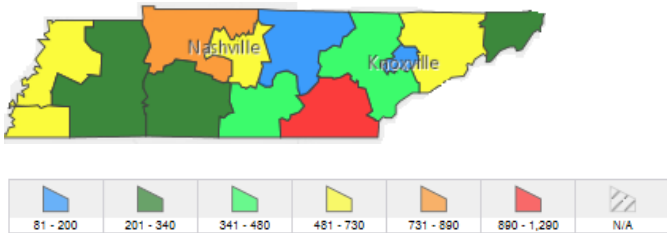
- Manufacturing Engineer (\$78,860)

This is not an exhaustive list of all of the opportunities available in Tennessee.

CAREER OPPORTUNITIES

For *Welding* occupations, employment of welders, cutters, solders, and brazers is projected to grow seven percent. Employment growth reflects the need for welders in manufacturing because of the importance and versatility of welding as a manufacturing process. The basic skills of welding are similar across industries, so welders can easily shift from one industry to another, depending on where they are needed most. Overall job prospects will vary with the worker's skill level. Job prospects should be good for welders trained in the latest technologies.

Employment Projections for *Welding* careers in Tennessee



Welding Related Occupations with the most Annual Average Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Total Percent Change
Welders, Cutters, Solders, and Brazers	8,630	9,210	6.60%
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	1,850	2,530	36.50%

Tennessee Department of Labor and Workforce Development, Job4TN Online. (2017). *Occupational Projections (Long-term)*. Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occproj>

POSTSECONDARY OPTIONS

School	Degree Program
Chattanooga State Community College	Welding Supervisor
Tennessee State University	Manufacturing Engineer

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SkillsUSA

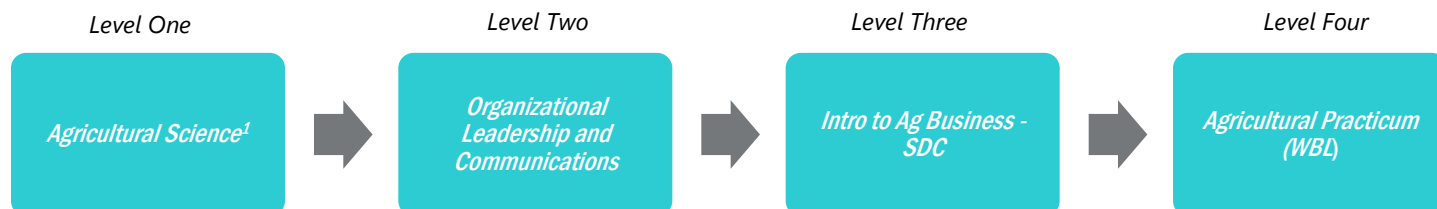
®Students in this program of study will be eligible to join SkillsUSA. In addition to school events, students will be able to compete at the regional, state, and national level. SkillsUSA improves the quality of America's skilled workforce through a structured program of citizenship, leadership, employability, technical and professional skills training. SkillsUSA enhances the lives and careers of students, instructors and industry representatives as they strive to be champions at work. See your manufacturing teacher to learn more about SkillsUSA or visit <http://www.skillsusa.org>



AGRICULTURE, FOOD, AND NATURAL RESOURCES



AGRICULTURE, FOOD, AND NATURAL RESOURCES



ABOUT THE PROGRAM OF STUDY

As the population continues to grow, successful production of food and other agricultural products will remain a global issue. The *Agribusiness* program of study will prepare students for agricultural businesses careers in industries related to the food, fiber, and natural resources industry. Students in this program of study will develop decision-making skills, understanding the dynamics and the leadership/management qualities to enhance their contributions to agribusiness enterprises or their own entrepreneurial venture. Proficient students have the opportunity to earn both general education and postsecondary credit while being prepared for advanced business courses at the postsecondary level or for a variety of agricultural careers.

Industry Certification:

- OSHA-10

Dual credit/dual enrollment options include:

- Intro to Ag Business-SDC

Career Opportunities

High School Diploma

- First-Line Supervisor of Farm Workers (\$39,470)

Associates

- Buying and Purchasing Agent (\$58,430)

Bachelors

- Farm and Home Management Advisor (\$42,794)
- Economist ((\$80,860)
- Agricultural Science Teacher, Postsecondary, Agribusiness (\$91,200)

High School Agribusiness Program of Study

CTE and Science Credit¹

Agriscience counts for both CTE and Personal Finance Credit.

Supervised Agricultural Experience (SAE) and Work-Based Learning

Early Postsecondary

SDC for Introduction to Agribusiness

CTSO Competitive Events

- FFA

Industry Certification

- OSHA-10

Associates

A.A.S. Agriculture Business

Walters State Community College

A.S. Agriculture Business

Jackson State Community College

Walters State Community College

Bachelors

B.S., Natural Resource & Environmental Economics

B.S., Food and Agricultural Business

University of Tennessee, Knoxville

B.S., Agribusiness Management

Tennessee Technological University

Tennessee State University

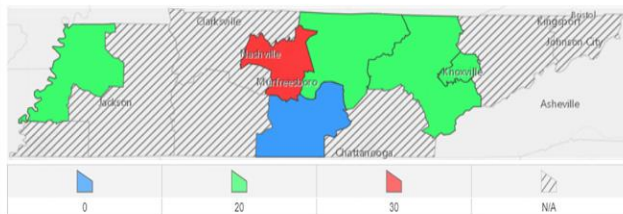
Middle Tennessee State University

B.S., Agricultural Business

University of Tennessee, Martin

This is not an exhaustive list of all of the opportunities available in Tennessee.

Job growth projections for buyers and purchasing agents of farm products through 2024.



Source: JOBS4TN.GOV, Accessed Aug.15, 2017



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

POSTSECONDARY OPTIONS

Postsecondary Offerings		
Program of Study	School	Degree Program
Food and Agricultural Business Natural Resources & Environment	University of Tennessee, Knoxville	Bachelor's, Master's, and/or Doctoral
Agricultural Business	University of Tennessee, Martin	Bachelor's
Agribusiness Management	Tennessee Tech University	Bachelor's
Agribusiness	Middle Tennessee State University	Bachelor's
Agricultural Business	Walters State Community College	Applied Associate's, Associate's

Agribusiness Related Occupations with the Largest Percentage of Openings in Tennessee (2014-20124)

Occupation	2014 Estimated	2024 Projected Employment	Employment Change	Annual Avg. Percent
13-1021 Buyers and Purchasing Agents, Farm Products	260	300	40	16%
13-2072 Loan Officers	5,800	6,380	580	8%
15-1151 Computer User Support Specialists	7,430	9,360	310	26%
27-1024 Graphic Designers	3,880	4,090	120	6%

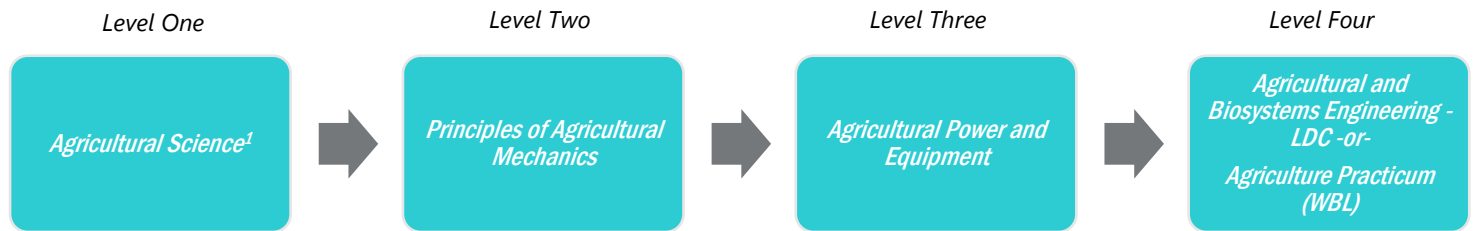
Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S

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Students in this program of study will be eligible to join FFA. Students will learn about agriculture, in addition to professionalism, leadership, and soft skills. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your agriculture teacher to learn more about FFA or visit <http://www.tnffa.org>.

AGRICULTURE, FOOD, AND NATURAL RESOURCES



ABOUT THE PROGRAM OF STUDY

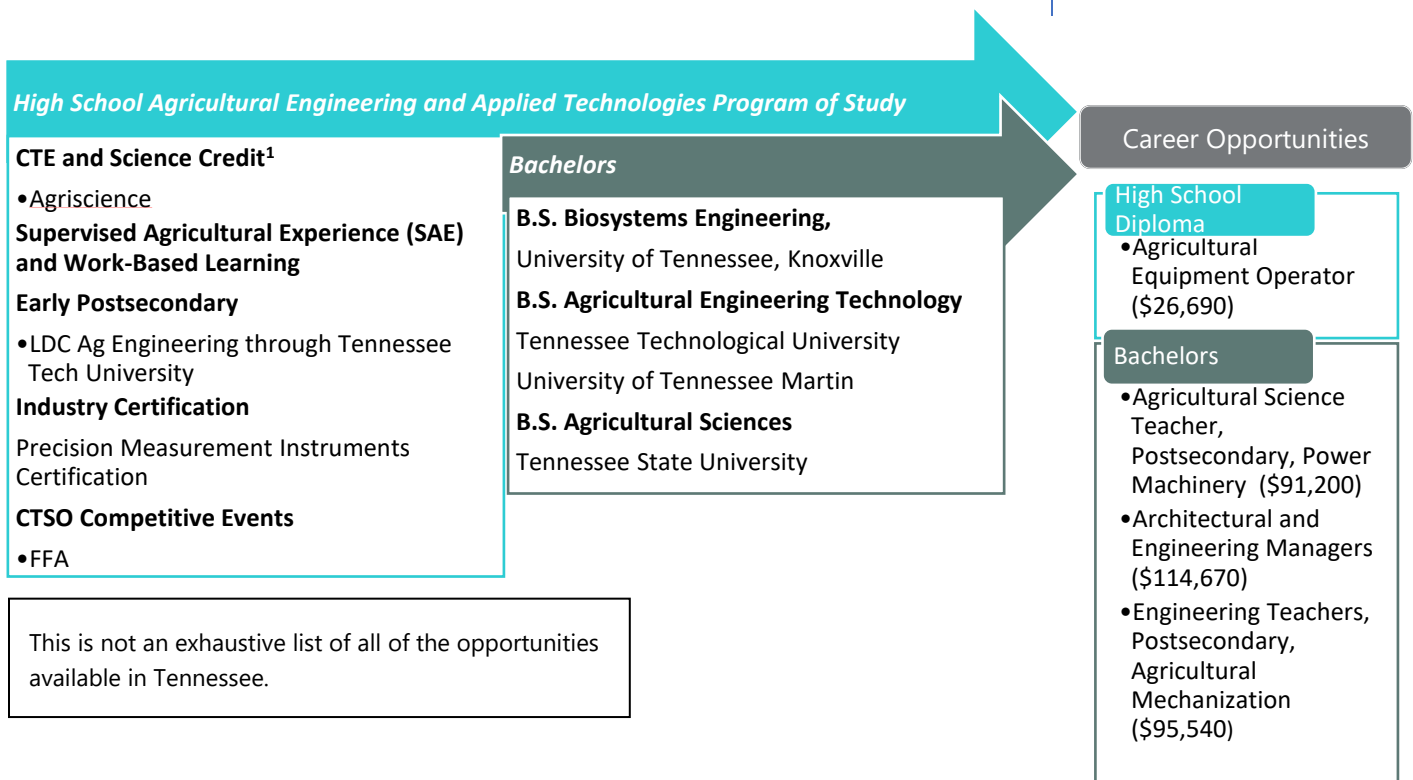
Agricultural Engineering and Applied Technologies prepares students for careers or further study in engineering, environmental science, agricultural design and research, and agricultural mechanics. Courses in this program of study address navigation, maintenance, repair, and overhaul of electrical motors, hydraulic systems, and fuel-powered engines. In addition, special emphasis is given to the many modern applications of geographic information systems (GIS) and global positioning systems (GPS) to achieve various agricultural goals, preparing students for immediate application of these skills in a career setting or postsecondary institution.

Industry Certification:

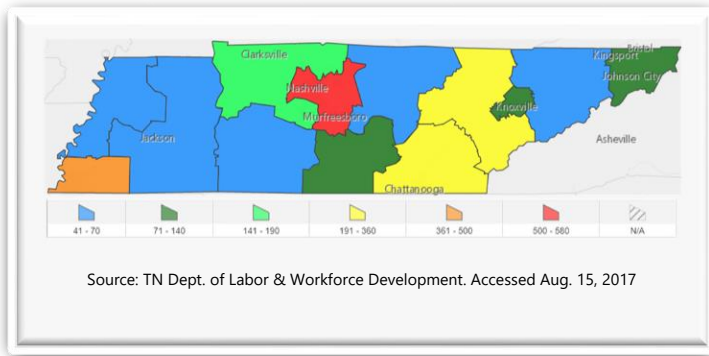
- Precision Measurement Instruments Certification

Dual credit/dual enrollment options include:

- Ag Engineering –LDC at TTU



The job outlook is growing with jobs within the architectural and engineering manager occupations.



Occupation	2014 Estimated Employment	2024 Projected Employment	Employment Change	Annual Avg. Percent Change
11-9041 Architectural and Engineering Managers	2,640	3,070	110	16%
49-3041 Farm Equipment Mechanics and Service Technicians	810	910	100	12%
45-2091 Agricultural Equipment Operators	1,190	1,200	40	0%
17-2021 Agricultural Engineers	2,900	3,000	100	4%

Source: TN Department of Labor & Workforce Dev, Div Emp Sec, R&S

Downloaded: May 17, 2017

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For more college and career planning resources, visit <http://collegefortn.org>

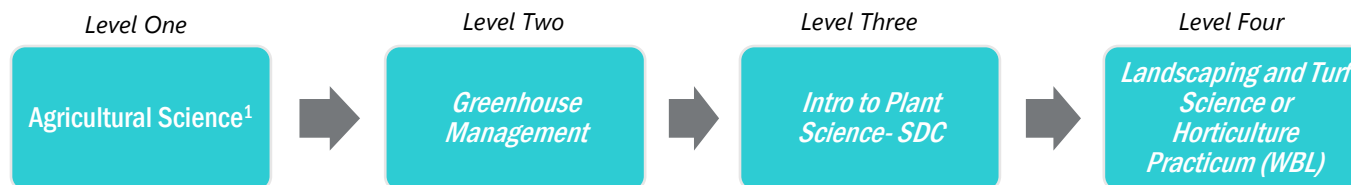
POSTSECONDARY OPTIONS



Students in this program of study will be eligible to join FFA. Students will learn about agriculture, in addition to professionalism, leadership, and soft skills. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your agriculture teacher to learn more about FFA or visit <http://www.tnffa.org>.

Postsecondary Offerings		
Program of Study	School	Degree Program
Bio systems Engineering,	University of Tennessee, Knoxville	Bachelor's, Master's , Doctoral
Agricultural Engineering Technology	University of Tennessee, Martin	Bachelor's
Agricultural Engineering Technology	Tennessee Tech University	Bachelor's

AGRICULTURE, FOOD, AND NATURAL RESOURCES



ABOUT THE PROGRAM OF STUDY

Horticulture Science is a broad and diverse program of study ranging from improving human environment to producing fruits and vegetables to managing of recreational and sports turf. Upon completion of this program of study, proficient students will be prepared for careers in the management of greenhouse operations, horticulture production, landscape design and maintenance, and turf management industries or further study in the horticultural, or plant sciences. This course is available as a statewide dual credit course which can count as the introduction to plant science course at the post secondary level.

Dual credit/dual enrollment options include:

- Intro to Plant Science – SDC

Career Opportunities

High School Agribusiness Program of Study

CTE and Science Credit

Agriscience

Supervised Agricultural Experience (SAE) and Work-Based Learning

Early Postsecondary

Statewide Dual Credit

Introduction to Agribusiness

CTSO Competitive Events

•FFA

Associates

A.A.S. Agriculture Business

Walters State Community College

A.S. Agriculture Business

Jackson State Community College

Walters State Community College

Bachelors

B.S., Natural Resource & Environmental Economics

B.S., Food and Agricultural Business

University of Tennessee, Knoxville

B.S., Agribusiness Management

Tennessee Technological University

Tennessee State University

Middle Tennessee State University

B.S., Agricultural Business

University of Tennessee, Martin

High School Diploma

- First-Line Supervisor of Farm Workers (\$39,470)

Associates

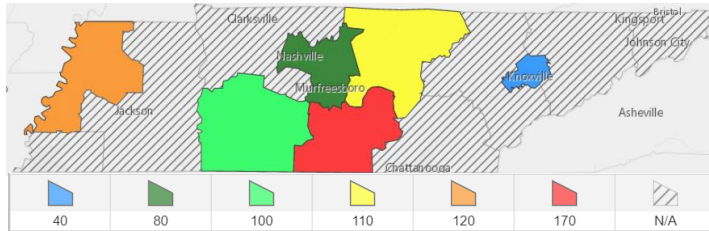
- Buying and Purchasing Agent (\$58,430)

Bachelors

- Farm and Home Management Advisor (\$42,794)
- Economist ((\$80,860)
- Agricultural Science Teacher, Postsecondary, Agribusiness (\$91,200)

This is not an exhaustive list of all of the opportunities available in Tennessee.

2024 Job projections for first-line supervisors of landscaping, lawn service, and grounds keeping workers.



Horticulture Science Related Occupations with the Largest Annual Percentage of Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Employment Change	Annual Avg. Percent Change
11-9121 Natural Sciences Managers	510	530	10	5%
25-1041 Agricultural Sciences Teachers, Postsecondary – Plant & Soil Science, Horticulture	260	290	10	14%
25-1042 Biological Science Teachers, Postsecondary	1,420	1,770	60	24%
25-9021 Farm and Home Management Advisors, Crop	150	170	0	15%
37-1012 First-Line supervisors of landscaping, lawn service, and grounds keeping workers	4,400	4,670	280	6%

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S

Downloaded: May 17, 2017



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Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year

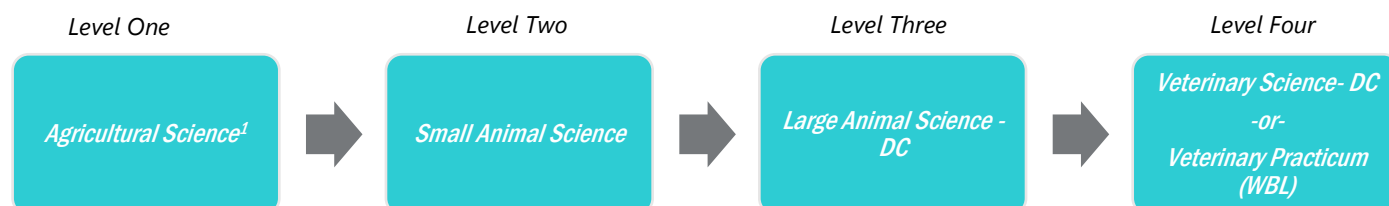
university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

For more college and career planning resources, visit <http://collegefortn.gov>.

POSTSECONDARY OPTIONS

Postsecondary Offerings		
Program of Study	School	Degree Program
Plant Science	University of Tennessee, Knoxville	Bachelor's, Master's , and/or Doctoral
Plant & Soil Science – Golf Course & Landscape Management	University of Tennessee, Martin	Bachelor's
Agriculture, Greenhouse Management	Waters State Community College	Applied Associate's, Associate's
Landscaping and Turf Management	Chattanooga State Community College	Technical Diploma

AGRICULTURE, FOOD, AND NATURAL RESOURCES



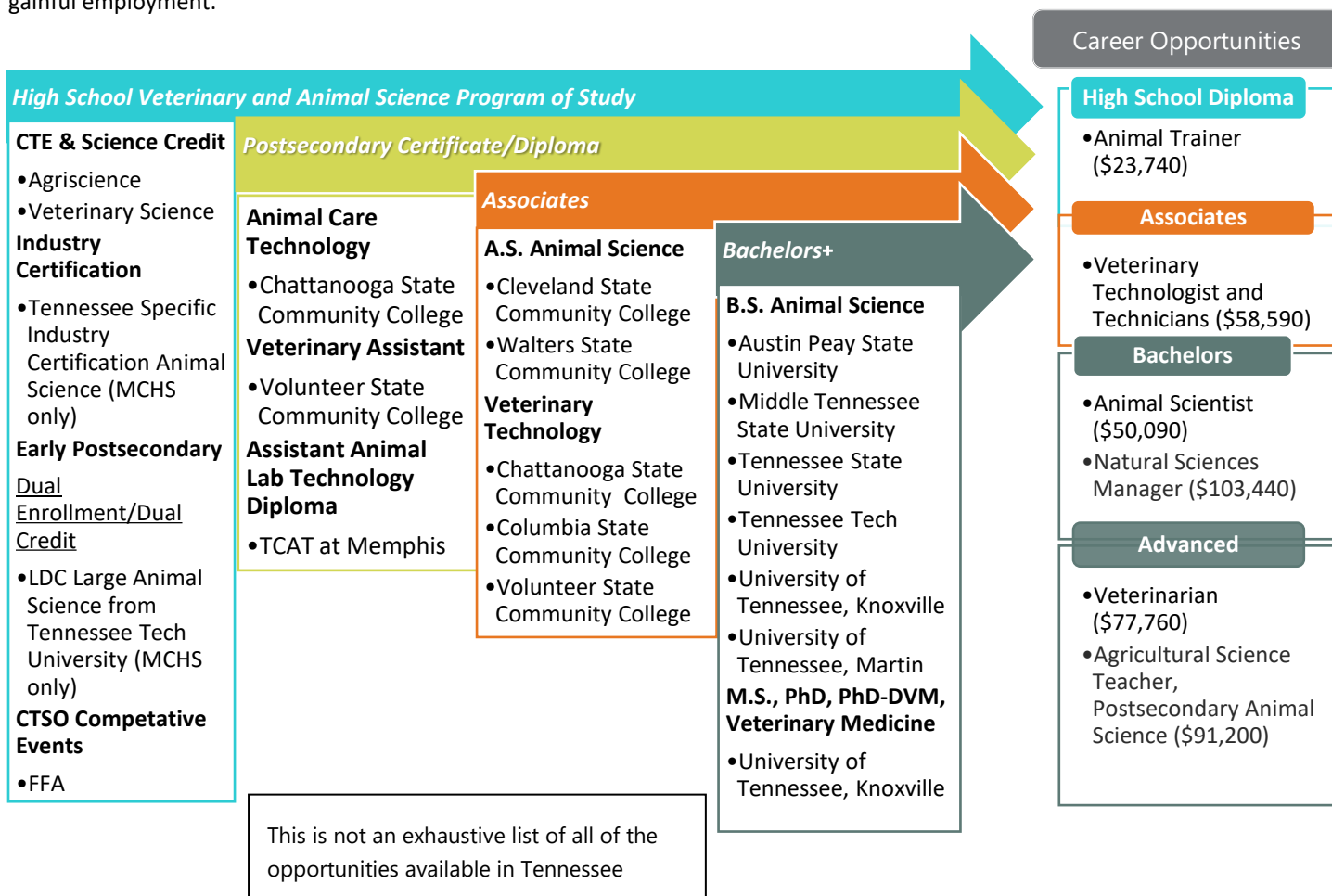
ABOUT THE PROGRAM OF STUDY

Veterinary and Animal Science is designed to prepare students to further their education for rewarding careers related to both companion and farm animals. This program of study provides rigorous technical skills, academic knowledge, higher-order reasoning, problem-solving skills, work attitudes, and employment skills. Course content covers such topics as principles of health and disease, basic animal care and nursing, clinical and laboratory procedures, and the anatomical/physiological systems of a range of small and large animals. Upon completion of this program of study, students will be prepared to pursue further study in the veterinary and animal sciences at the postsecondary level or to seek gainful employment.

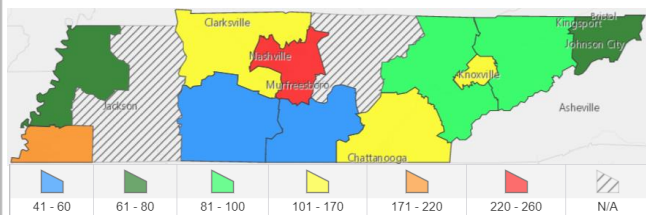
Tennessee Specific Industry Certification (TSIC) for Animal Science (Offered at MCHS only)

Dual credit/dual enrollment options include:

- Large Animal Science local dual credit through TTU (SDC offered only at MCHS)



The job outlook for this program of study projects continued growth in veterinarians.



Source: Tennessee Department of Labor and Workforce Development. Accessed Aug. 15, 2017

Veterinary and Animal Science related Occupations with the Largest Annual Percentage of Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Employment Change	Annual Avg. Percent Change
11-9121 Natural Sciences Managers, Animal Biology/Zoology/Genetics	510	530	10	5%
25-1041 Agricultural Science Teacher, Postsecondary, Animal/Livestock husbandry/Production/Training	260	290	10	14%
25-1042 Biological Science Teachers, Postsecondary, Zoology/Animal Biology	1,420	1,770	60	24%
25-1071 Health Specialties Teachers, Postsecondary, Veterinary Health	5,100	7,010	2770	38%
29-1131 Veterinarians	1,210	1,440	230	19%
29-2056 Veterinary technologists and technicians	1,620	2,240	620	38%

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S

Downloaded: May 17, 2017



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year university programs for free! To learn more, please see your school counselor or visit

<http://www.tennesseepromise.gov>.

POSTSECONDARY OPTIONS

Postsecondary Offerings Aligned to this Program of Study		
Program of Study	School	Degree Program
Animal Science	University of Tennessee, Knoxville	Bachelor's, Master's, and/or Doctoral
Animal Science / Horse Science	Middle Tennessee State University	Bachelor's, Master's
Animal Science – Pre Veterinary Medicine / Agriculture – Animal Science Pathway	Walters State Community College Jackson State Community College	Associate's (TTP)

For more college and career planning resources, visit

<http://collegefortn.org>.



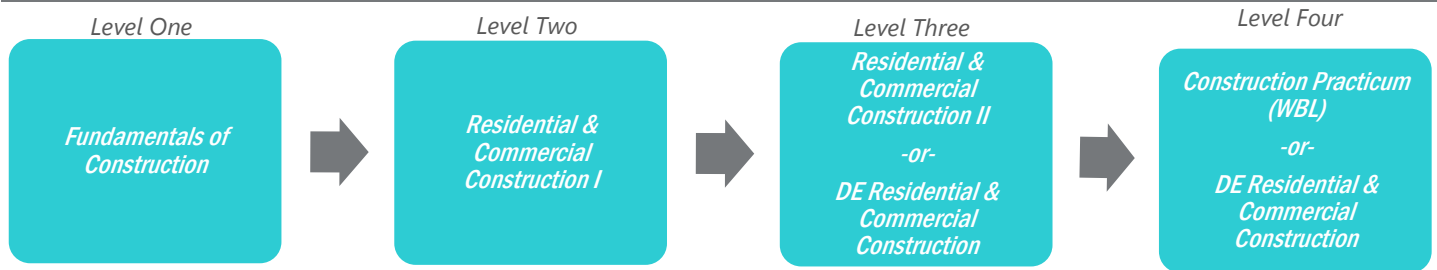
Students in this program of study will be eligible to join FFA. In addition to school events, students will be able to compete at the district, regional, state, and national levels. Through FFA, students not only learn about agriculture, but also professionalism, leadership, and soft skills. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your agriculture teacher to learn more



ARCHITECTURE & CONSTRUCTION



ARCHITECTURE & CONSTRUCTION



ABOUT THE PROGRAM OF STUDY

The Residential & Commercial Construction program of study prepares students for the various disciplines of construction, providing students with the opportunity to develop a holistic understanding of the building systems and components required for a construction project. Students will be able to interpret construction drawings, perform basic math skills, demonstrate the construction crafts required for each phase of a construction project and safely use and maintain appropriate tools, equipment, and resources to accomplish construction project goals. Course content covers industry specific business concepts, project management, and career opportunities. In the third level course, programs have the option to select a focus area. The fourth level course, *Construction Practicum*, places students with industry partners to complete a capstone construction project.

Industry certification options include:

- NCCER Core Curriculum
- NCCER Construction Technology

Dual credit/dual enrollment options include:

- 1 hour per HS block through TCAT earned during grades 10, 11 & 12.

Career Opportunities

High School Diploma

- General maintenance & repair workers, \$35,740
- Operating engineers and equipment operators, \$36,170
- Sheet metal workers, \$37,390
- Painters, construction and maintenance, \$30,900
- Cement masons and concrete finishers, \$31,820
- Roofers, \$32,540

Apprenticeship

- Carpenters, \$34,080
- Electricians, \$46,790
- Plumbers, pipefitters, and steamfitters, \$45,860
- Electrical power-line installers and repairers, \$66,930
- First-line supervisors of construction trades and extraction workers, \$50,350

Certificate

- HVAC technicians, \$38,950
- First-line supervisors of mechanics, installers, and repairers, \$55,550

Associates

- Electrical and electronics engineering technicians, \$53,320
- Civil engineering technicians, \$49,920

Bachelors

- Construction managers, \$76,040
- Architecture & engineering occupations, \$70,380
- Surveyors, \$44,940

High School Residential & Commercial Construction Program of Study

Early Postsecondary

DE 1 hr per HS block taken grades 10, 11, & 12 through TCAT

Industry Certification

- NCCER Core Curriculum
- NCCER Construction Technology

CTSO Competitive Events

• SkillsUSA

Work-based Learning: Career Practicum

Apprenticeship

Apprenticeship training is available in carpentry, electrical, HVAC, plumbing, and many more areas.

Certificate

Building Construction Technology

- TCATs in 10 locations

Other

- Additional TCAT offerings include Electrical Construction, HVAC/R, Plumbing and Pipefitting, Brick, Block, & Stone Masonry, Concrete Technology, Clean Energy Building Technology, Surveying, Electrical & Power Transmission Installation, Heavy Equipment Operator, Industrial Electricity, Mechanical Maintenance Fundamentals, Woodworking

Associates

Electrical Engineering Technology

- Nashville State
- Southwest TN

Electrical Technology

- Northeast State
- Chattanooga State

Civil Technology

- Cleveland State

Bachelors

Construction Management

- MTSU
- University of Tennessee at Chattanooga

Construction Science

- University of Tennessee at Knoxville

Concrete Industry Management

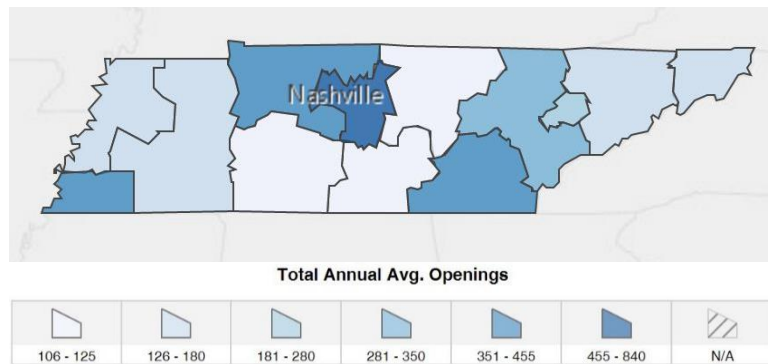
- MTSU
- Architecture & Engineering
- Available at many TN universities

This is not an exhaustive list of all of the opportunities available in Tennessee

CAREER OPPORTUNITIES

The construction and extraction occupation group is projected to grow by 10.8 percent in Tennessee between 2014 and 2022 with a total annual average of 3,205 openings. Within the installation, maintenance, and repair occupation group, an additional 3,120 total annual average openings are projected (not including vehicle installers and repairers). Opportunities are available in a broad range of occupations. Job outlook is positive in all regions of the state; however, more opportunities are available in urban and surrounding areas.

Annual Average Openings for Construction & Extraction Occupations in Tennessee (2014-2022)



Source: TN Department of Labor and Workforce Development. (2015). Employment Security Division, Labor Market Information Section, on the internet at <https://www.jobs4tn.gov/> (visited Feb. 10, 2016)



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some 2-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

POSTSECONDARY OPTIONS

School	Degree Program
TCAT Nashville	Building Construction Technology
TCAT Murfreesboro	HVAC/R
Cleveland State	Surveying
TCAT Paris	Residential Building Maintenance
Chattanooga State	Construction Management (concentration)
Chattanooga State	Construction Engineering Technology

Construction Occupations with the Most Annual Average Openings in Tennessee (2014-2022)

Occupation	Total Percent Change	Annual Avg. Openings
Maintenance & Repair Workers, General	7.7%	880
Construction Laborers	12.9%	840
Electricians	9.0%	340
First-Line Supervisors of Mechanics, Installers, & Repairers	6.3%	335
HVAC/R Mechanics & Installers	10.9%	275
Construction Managers	4.6%	235
Civil Engineers	17.6%	215
Supervisors of Construction & Extraction Workers	9.2%	210

Students in this program of study will be eligible to join SkillsUSA. In addition to school events, students will be able to compete at the regional, state, and national level. Through SkillsUSA, students not only learn about construction, but also professionalism, leadership, and workplace skills. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your teacher to learn more about SkillsUSA or visit <http://tnskillsusa.com>



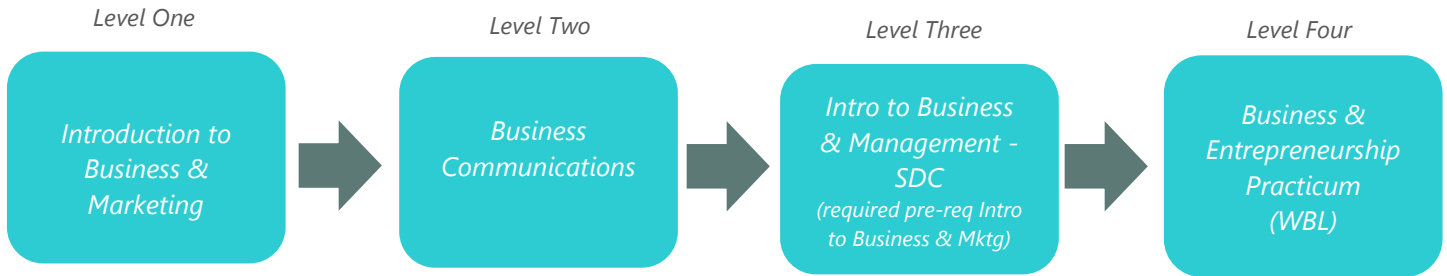
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BUSINESS MANAGEMENT & ADMINISTRATION



BUSINESS MANAGEMENT & ADMINISTRATION



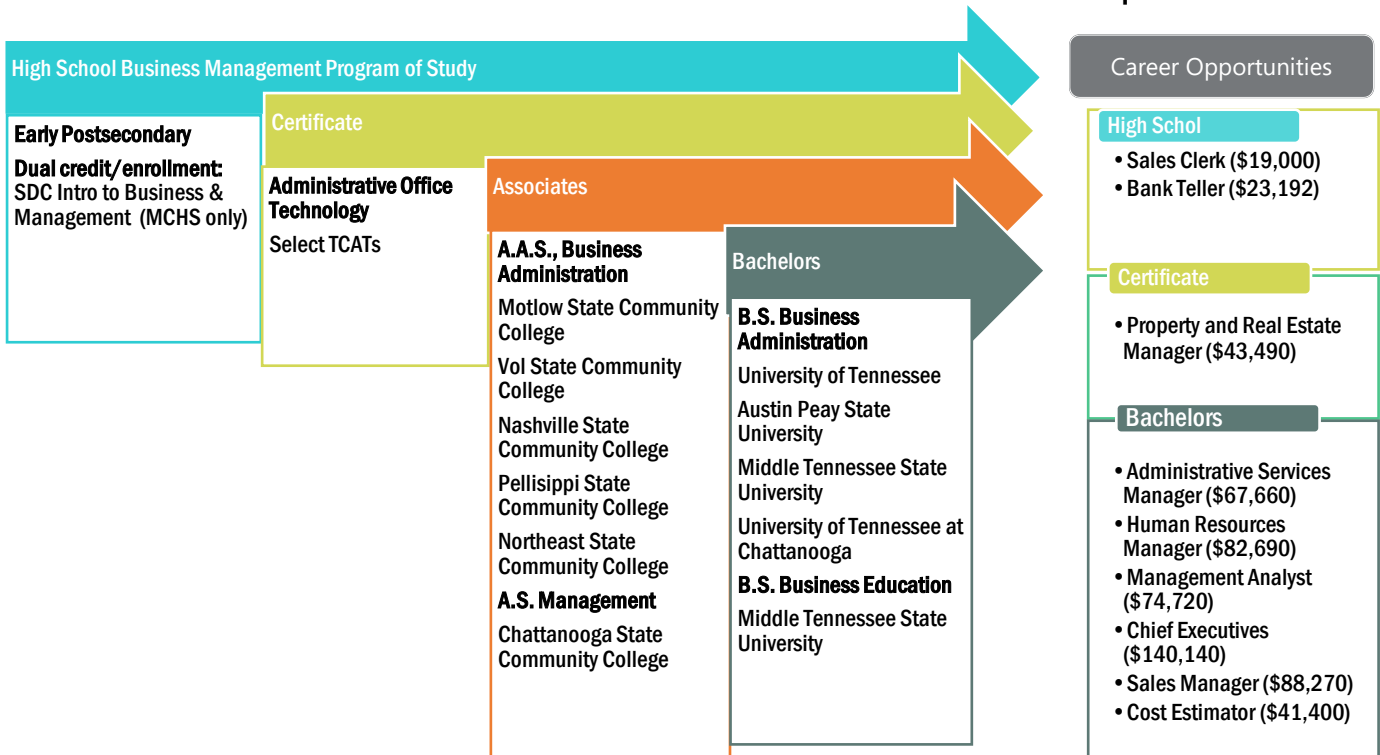
ABOUT THIS PROGRAM OF STUDY

The *Business Management* program of study will prepare you for a career in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Career opportunities are available in every sector of the economy and require specific skills in organization, time management, customer service and communication. The *business management and administration services* industry, one of the highest paying industries, is projected to be one of the fastest growing through the year 2020. Nearly half of all jobs are in managerial and professional occupations, and nearly one-fourth of all workers are self-employed – you can be your own boss!

Dual credit/dual enrollment options include:

Intro to Business & Management State Dual Credit (SDC only offered at MCHS)

Note: Intro to Business & Marketing is a required pre-requisite to this class



This is not an exhaustive list of all of the opportunities available in Tennessee.


CAREER OPPORTUNITIES

The *Business Management* occupation group is projected to grow by 12% in Tennessee between 2014 and 2022. Job opportunities are strongest in areas of Shelby and Davidson Counties, around the metropolitan areas of Memphis and Nashville respectively, though there is strong potential for openings in other counties in the upper mid Cumberland area. Occupations from this program of study with the greatest number of average annual openings include supervisors of office and administrative workers, business operations specialists, and management analysts.

Annual Average Openings for Business Operations Occupations Workers in Tennessee (2014 – 2022)



Source: TN Department of Labor and Workforce Development. (2015). Employment Security Division, Labor Market Information Section, on the internet at <https://www.jobs4tn.gov/> (visited February 8, 2016)



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POSTSECONDARY OPTIONS

School	Degree Program
Tennessee College of Applied Technology	Business Systems Technology
Chattanooga/Motlow/Walters State Community Colleges	Business Management
Austin Peay State University	Management
University of Tennessee (Knoxville)	Business Analytics
University of Tennessee at Martin	Business Administration

Business Management Occupations with the Most Annual Average Openings in Tennessee (2014 – 2022)

Occupation	Annual Average Openings	Total % Change
Administrative Service Managers	245	17.30%
Business Operations Specialists	335	12.80%
Chief Executives	440	10.90%
Human Resources Managers	120	26.50%
Sales Managers	280	14.20%
Property and Real Estate Managers	310	16.90%
Management Analysts	405	26.90%

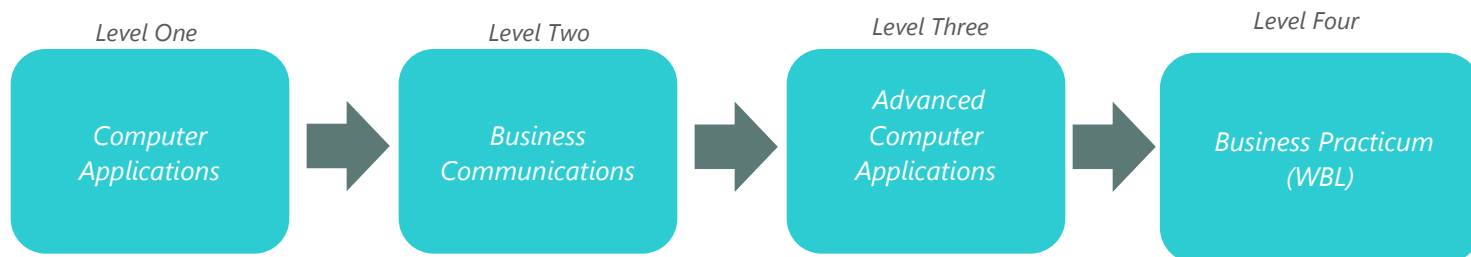
Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, p. 5



Students in this program of study will be eligible to join FBLA, Future Business Leaders of America. In addition to school events, students will be able to compete at regional, state, and national levels.

Through FBLA, students not only learn about business, but also professionalism, leadership, and soft skills. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your business teacher to learn more about FBLA or visit <http://www.fblatn.org>.

BUSINESS MANAGEMENT & ADMINISTRATION

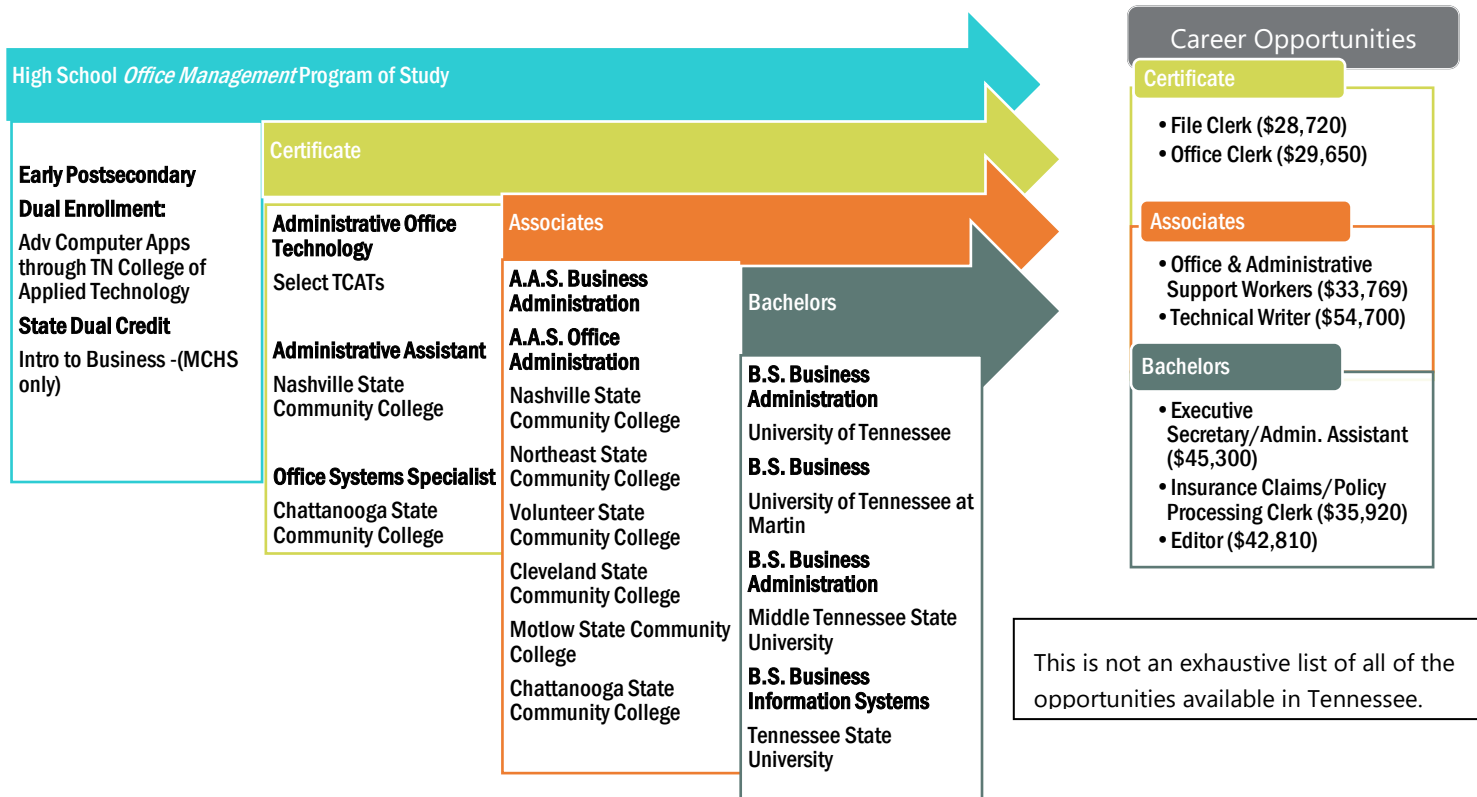


ABOUT THIS PROGRAM OF STUDY

Office Management program of study teaches business operations as students learn a variety of administrative and clerical duties including information and communication management, data processing and collection, and project tracking. Students who like to access, process, maintain, evaluate, and disseminate information for business decisions or those who like to obtain and convey ideas and information in order to conduct business transactions would enjoy this program of study. Students in this program of study will learn about the management theories of some of the largest companies in the United States. In addition, they will learn important skills for success in professionalism, digital citizenship, and critical thinking.

Dual credit/dual enrollment options include:

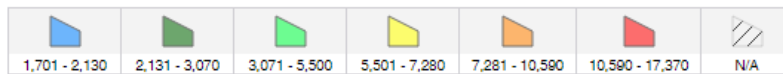
Intro to Business & Management - State Dual Credit (Note: pre-requisite class, Intro to Business Marketing)
Advanced Computer Applications – dual enrollment through TCAT



CAREER OPPORTUNITIES

The *Office Management* occupation group is projected to grow by 8% in Tennessee between 2014 and 2022. Job opportunities are strongest in the area in and around Davidson County (metropolitan Nashville area), though there is strong potential for openings in other counties around the metropolitan areas of Memphis, Clarksville, and Chattanooga. Occupations from this program of study with the greatest number of average annual openings include customer service representatives, file clerks, insurance claims assistants, and receptionists.

Annual Average Openings for Office & Administrative Support Workers in Tennessee (2014 – 2022)



Source: TN Department of Labor and Workforce Development. (2015). Employment Security Division, Labor Market Information Section, on the internet at <https://www.jobs4tn.gov/>



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT),

community college, or select 2-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

POSTSECONDARY OPTIONS

School	Degree Program
Tennessee College of Applied Technology	Administrative Office Technology
Nashville/Northeast/Volunteer State Community Colleges	Office Administration
Middle Tennessee State University	Business Administration
University of Tennessee (Knoxville)	Human Resource Management
University of Tennessee at Martin	General Business

For more college and career planning resources, visit <http://collegefortn.org>.

Office Management Occupations with the Most Annual Average Openings in Tennessee (2014 – 2022)

Occupation	Average Annual Openings	Total % Change
Customer Service Representatives	2,270	17.90%
File Clerks	65	3.60%
Technical Writers	25	21.80%
Insurance Claims/Policy Processing Clerks	110	13.90%
Office Clerks	2,005	9.90%
Receptionists	930	19.20%
Secretaries and Administrative Assistants	1,795	13.20%

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S



Students in this program of study will be eligible to join FBLA, Future Business Leaders of America. In addition to school events, students will be able to compete at regional, state, and national levels.

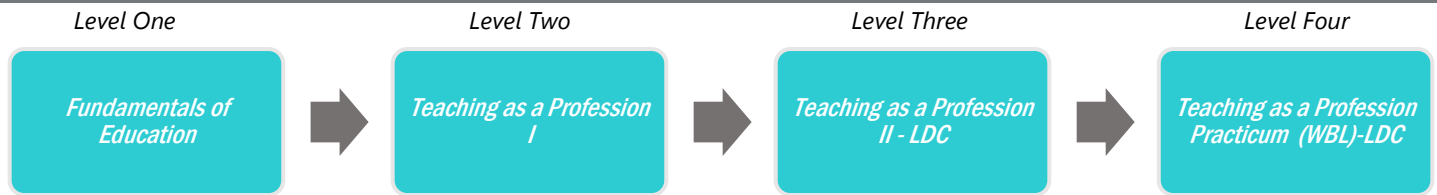
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EDUCATION & TRAINING

Teaching as a Profession (TAP)

Offered at MCHS

EDUCATION & TRAINING

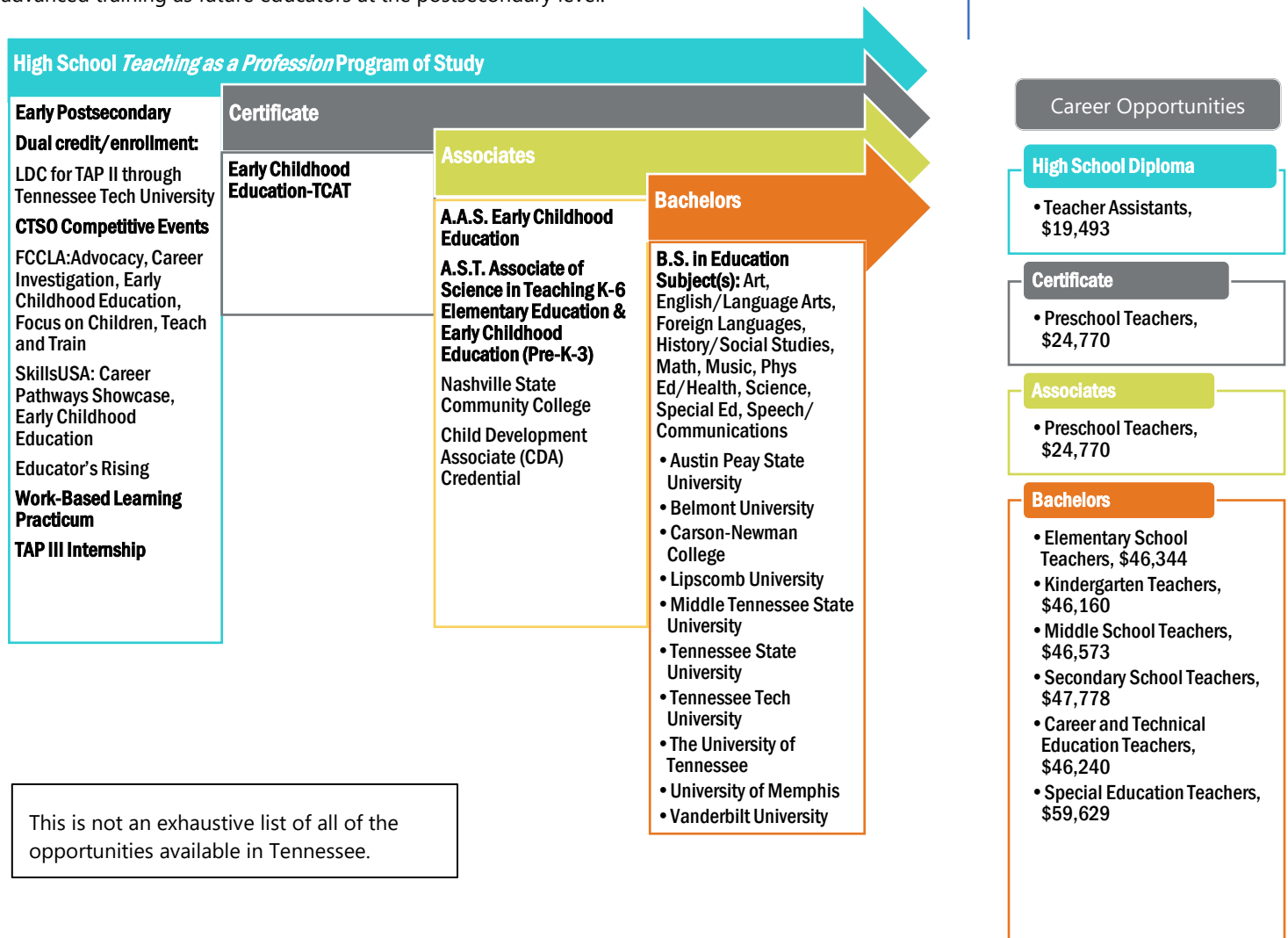


ABOUT THE PROGRAM OF STUDY

Teaching as a Profession is designed for students interested in becoming a teacher, school counselor, librarian, or speech-language pathologist. While in this program of study, students will learn teaching and classroom management strategies, lesson planning, special populations, how to use educational technology, how to become a professional, and more! Upon completion of this program of study, students will have participated in an internship and built a professional portfolio that can be used for advanced training as future educators at the postsecondary level.

Dual credit/ dual enrollment options include:

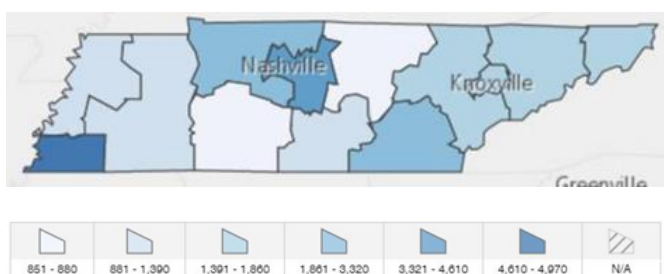
TAP II Local Dual Credit through TTU



CAREER OPPORTUNITIES

The *Teaching as a Profession* occupation group has a bright outlook statewide between 2014 and 2024. Job opportunities are strongest in urban, suburban, and northern areas of Tennessee. The job outlook for this program of study in Tennessee is as follows: 20 percent increase for elementary workers, 19.7 percent increase for middle school teachers, 12.8 percent increase for special education school teachers, and 14.2 percent increase for speech-language pathologists by 2024.

Employment Projections for *Teaching as a Profession* in Tennessee (2014-2024)



Teaching as a Profession Related Occupations with the Most Annual Average Openings in Tennessee (2014-2024)

Occupations	Total Percent Change	Median Salary
Elementary School Teachers, Except Special Education	14.5%	\$48,750
Educational, Guidance, School, and Vocational Counselors	11.40%	\$46,930
Secondary School Teachers, Except Special Education	7.9%	\$60,370
Middle School Teachers, Except Special Education	15.00%	\$47,940
Librarians	10.10%	\$51,300
Speech-Language Pathologists	25.10%	\$55,050
Teachers and Instructors, All Other	13.30%	\$43,300

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S
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POSTSECONDARY OPTIONS

School	Degree Program
Nashville State Community College	Teaching or Early Childhood Education
Motlow State Community College	Teaching or Early Childhood Education
Volunteer State Community College	Teaching or Early Childhood Education

For more college and career planning resources, visit <http://collegefortn.org>.



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

Students in this program of study will be eligible to join FCCLA, Family, Career and Community Leaders of America. In addition to school events, students will be able to compete at the district, state, and national level. Involvement in FCCLA offers students the opportunity to expand their leadership potential and develop skills for life—planning, goal setting, problem solving, decision making, and interpersonal communication—necessary in the home and workplace. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your adviser to learn more about FCCLA or visit <http://www.tennesseefccla.org>.

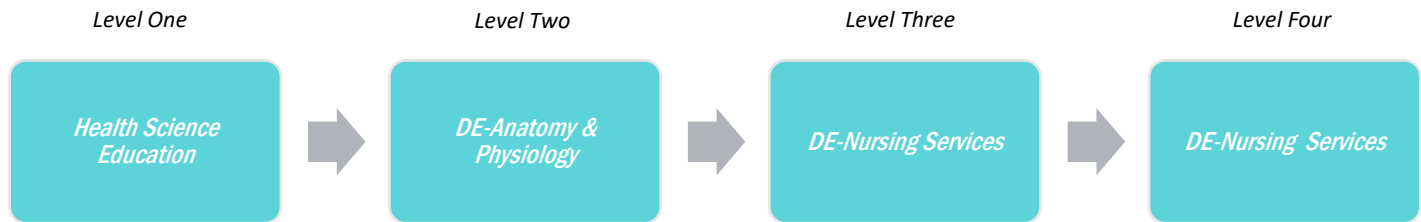


HEALTH SCIENCE

Nursing Services

Offered at TCAT Tri-County Extension Campus

HEALTH SCIENCE



ABOUT THE PROGRAM OF STUDY

Therapeutic Nursing Services is designed to prepare students to pursue careers in the field of nursing. Upon completion of this program, a proficient student will be able to implement communication and interpersonal skills, maintain residents' rights and independence, provide care safely, prevent emergency situations, prevent infection through infection control, and perform the skills required of a nursing assistant. Students will log forty hours of site-based clinical work with at least 24 of those hours spent in a long-term care facility as part of the Level 4 course.

High School Therapeutic Nursing Program of Study

Nursing Services Program of Study

Health Science Education

Anatomy & Physiology

Nursing Services

CNA Licensure

Early Postsecondary

DE 1 hr per HS block through TCAT for grades 11, & 12

Certificate

Practical Nursing

Most TCATs offer practical nursing

Associates

Nursing

Available at most community colleges

Surgical Technology

Chattanooga State, Crossville State, Jackson State

Bachelors

B.S.N. Nursing

Austin Peay State University
UT Martin
Tenn Tech University
UT Chattanooga
UT Knoxville
Cumberland University

Industry Certifications options include:

- Certified Nursing Assistant Certification

Dual credit/dual enrollment options include:

- 1 hour per HS block through TCAT earned during grades 11 & 12

Career Opportunities

Certificate

- Nursing Assistant (\$24,420)

Associates

- Licensed Practical Nurse (\$41,540)

Bachelors

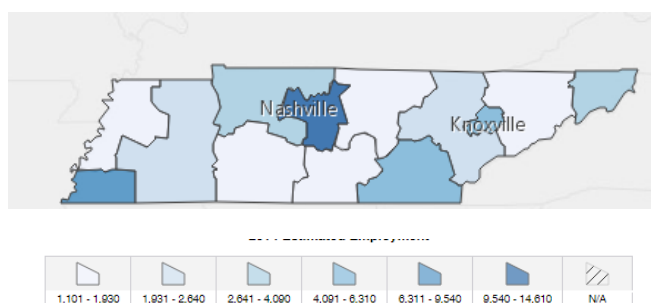
- Registered Nurse (\$65,470)

This is not an exhaustive list of all of the opportunities available in Tennessee.

CAREER OPPORTUNITIES

The Therapeutic Nursing occupation group will have positive growth statewide between 2014 and 2022. Employment of registered nurses is projected to grow 14-16 percent from 2014 to 2024, much faster than the average for all occupations. Growth will occur for a number of reasons, including an increased emphasis on preventive care; growing rates of chronic conditions, such as diabetes and obesity; and demand for healthcare services from the baby-boom population, as they live longer and more active lives.

Annual Average Openings for Registered Nurses in Tennessee (2014-2022)



Therapeutic Nursing Related Occupations with Positive Growth in Tennessee (2014-2022)

Occupations	Total Percent Change	Total Annual Av. Openings
Nursing Assistants	14.4%	1,125
Licensed Practical Nurses	17.8%	1,025
Registered Nurse	15.6%	2,205



Students in this program of study will be eligible to join HOSA: Future Health Professionals. In addition to school events, students will be able to compete at the regional, state, and national level.

HOSA's two-fold mission is to promote career opportunities in the health care industry and to enhance the delivery of quality health care to all people. HOSA's goal is to encourage all health occupations instructors and students to join and be actively involved in the HSE-HOSA Partnership. HOSA provides a unique program of leadership development, motivation, and recognition exclusively for secondary, postsecondary, adult, and collegiate students enrolled in HSE programs. HOSA is 100% health care! For more information, please visit <http://www.hosa.org>.



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some 2-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

Postsecondary Offerings Aligned to this Program of Study

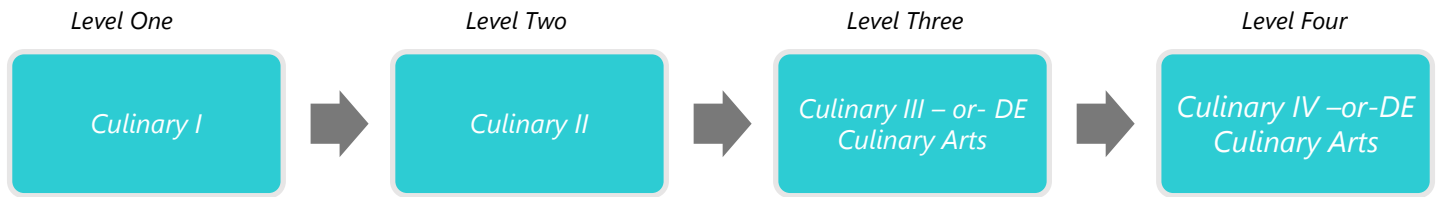
School	Degree Program
Most Tennessee Colleges of Applied Technology	Licensed Practical Nursing
East & Middle Tennessee State Universities University of Tennessee at Knoxville & Memphis	B.S. Nursing

HOSPITALITY & TOURISM

Culinary Arts

Offered at TCAT Tri-County Extension Campus

HOSPITALITY & TOURISM



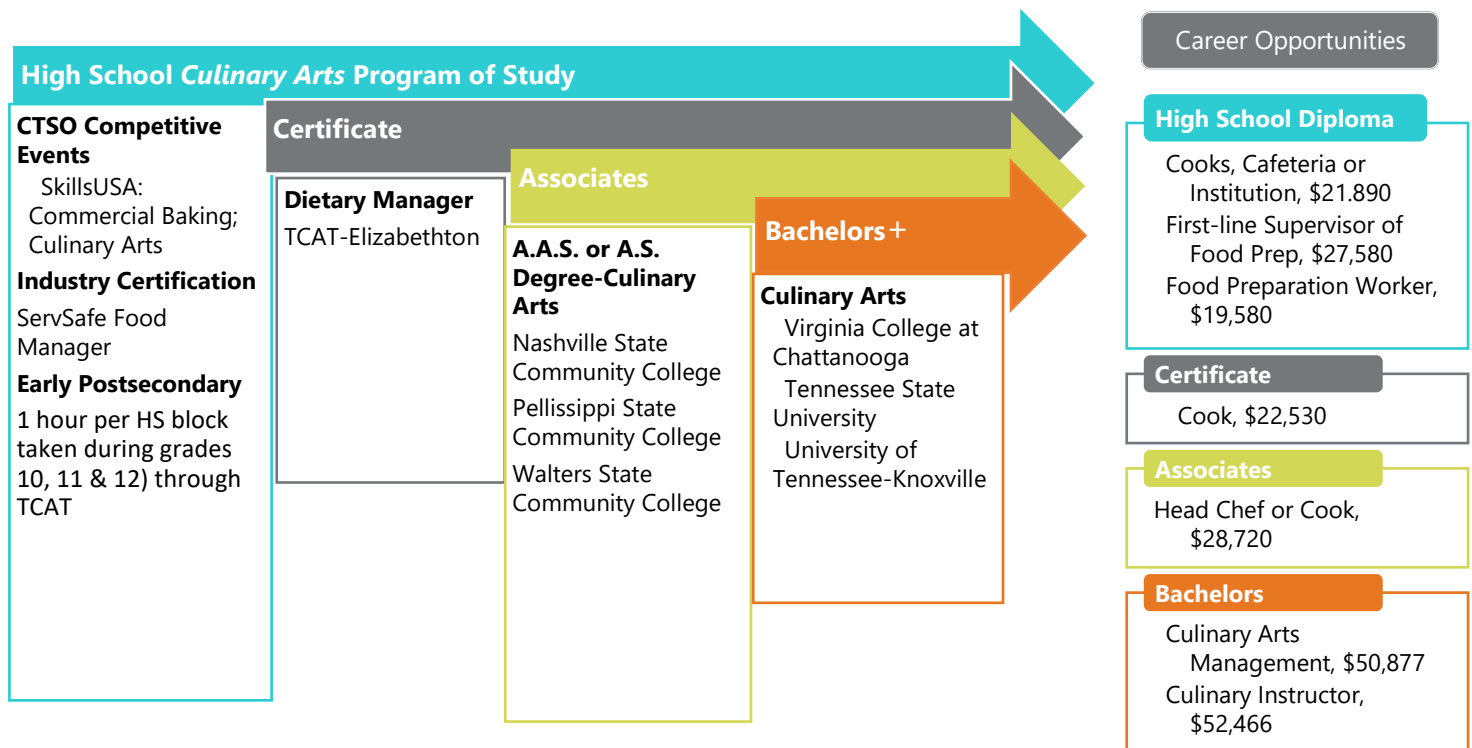
ABOUT THE PROGRAM OF STUDY

Culinary Arts equips students with the foundational skills necessary to pursue careers in the culinary field as a banquet chef, caterer, executive chef, and food and beverage manager. Courses cover topics that range from kitchen safety and sanitation, history of the foodservices industry, careers, nutrition, recipe basics, proper kitchen tools and equipment, and kitchen staples, to food presentation, advanced cooking principles, bakeshop preparation skills, professionalism, and business opportunities. Upon completion of this program of study, students will have applied a full range of knowledge and skills in culinary arts and built a professional portfolio in preparation for future training at the postsecondary level.

Dual credit/ dual enrollment options include:

1 hr per HS block credit for classes taken in grades 10, 11, & 12 through TCAT

Industry Certification:
Tennessee Specific Industry
ServSafe Food Manager

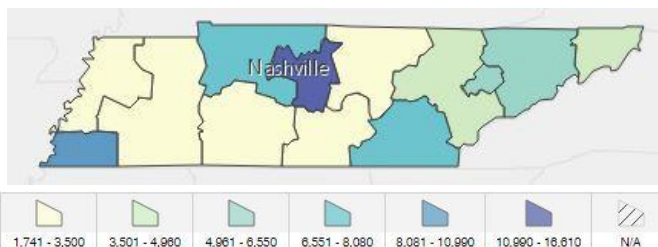


This is not an exhaustive list of all of the opportunities available in Tennessee.

CAREER OPPORTUNITIES

The *Culinary Arts* occupation group is projected to grow by 6.12 percent in Tennessee between 2014 and 2024. Job opportunities are strongest in urban and suburban areas of Tennessee. The job outlook for this program of study in Tennessee is as follows: 6.10 percent increase for cooks and preparation workers, 9.80 percent increase for first-line supervisors of food preparation and serving workers, and a 2.9 percent increase for chefs and head cooks by 2024. According to Career One Stop's *Top 50 Occupations with the Largest Employment*, five of the fifty fastest growing occupations are within this program of study nationally.

Employment Projections for Cooks and Food Preparation Workers in Tennessee (2014-2024)



POSTSECONDARY OPTIONS

School	Degree Program
Nashville State Community College	Culinary Arts
Southwest Tennessee Community College	Culinary Arts
Pellissippi State Community College	Culinary Arts



Have you registered for Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT),

community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

For more college and career planning resources, visit <http://collegefortn.org>.

Culinary Arts Related Occupations with the Most Annual Average Openings in Tennessee (2014-2024)

Occupations	Total Percent Change	Total Annual Avg. Openings
Chefs and Head Cooks	2.90%	50
Cooks and Food Preparation Workers	6.10%	2,365
First-Line Supervisors of Food Preparation and Serving Workers	9.80%	695
Food and Beverage Serving Workers	7.10%	6,980
Other Food Preparation and Serving Related Workers	4.70%	1,720

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S Downloaded: 01/17/2018 9:49 AM



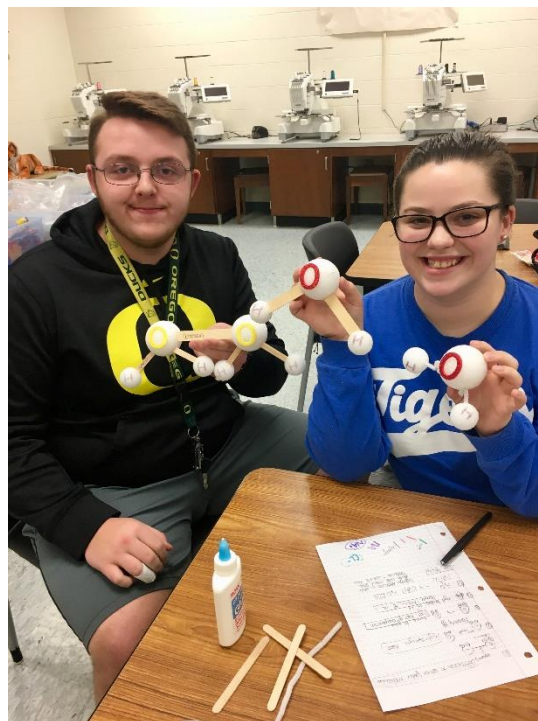
Students in this program of study will be eligible to join FCCLA, Family, Career and Community Leaders of America or SkillsUSA. In addition to school events, students will be able to compete at the district or regional, state, and national

level. Involvement in FCCLA or SkillsUSA offers students the opportunity to expand their leadership potential and develop skills for life—planning, goal setting, problem solving, decision making, and interpersonal communication—necessary in the home and workplace. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your teacher to learn more about FCCLA & SkillsUSA or visit <http://www.tennesseefccla.org> or <http://tnskillsusa.com>.

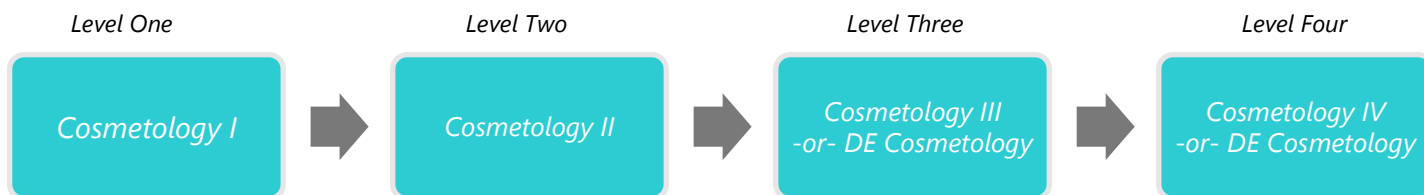




HUMAN SERVICES



HUMAN SERVICES

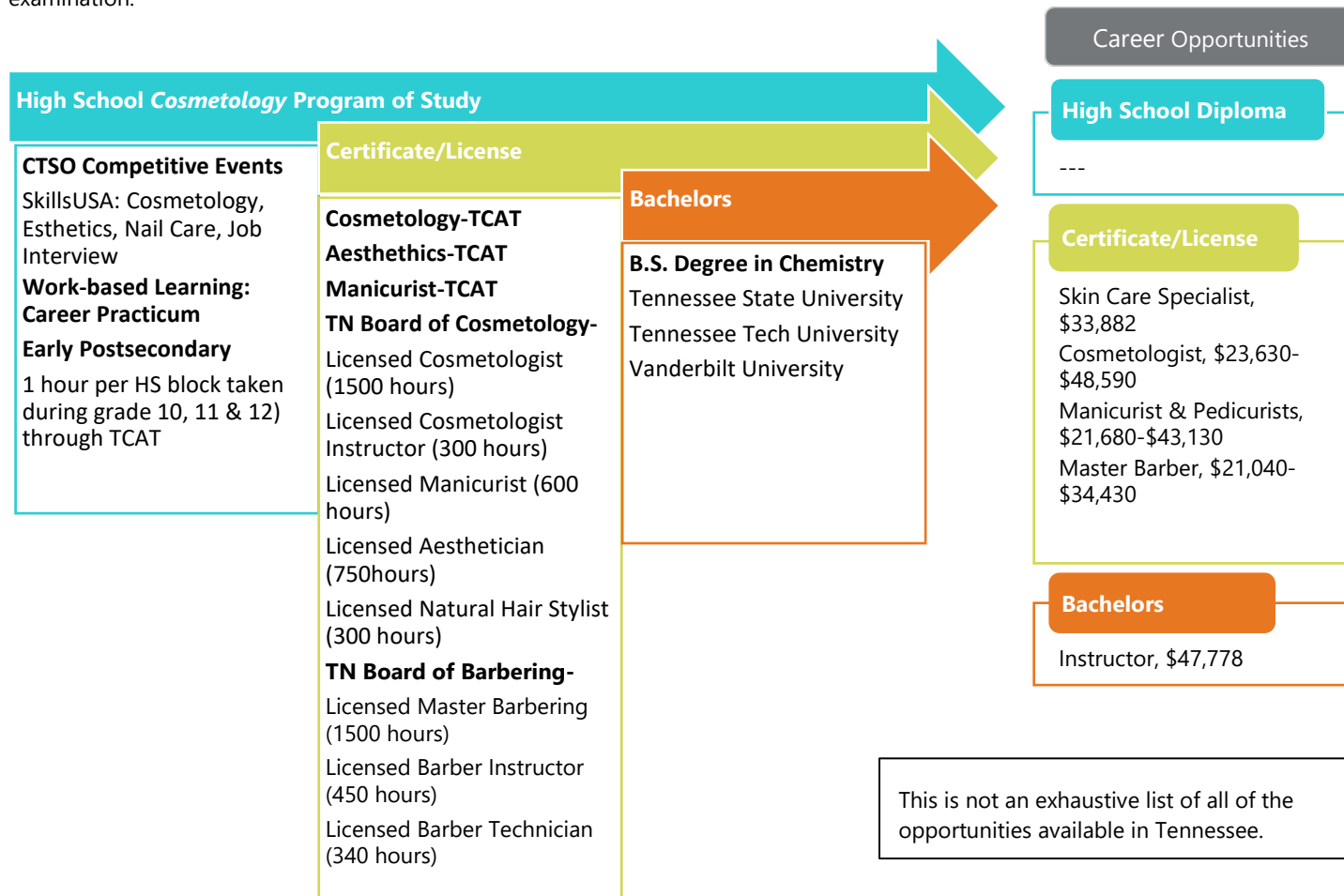


ABOUT THE PROGRAM OF STUDY

All courses in the *Cosmetology* program of study have been revised to address and prepare students for postsecondary and industry standards. *Cosmetology* is designed to prepare students for careers in cosmetology by developing an understanding of efficient and safe work practices, salon business concepts and operations, hair techniques and chemical services, facial and skin care procedures and state board theoretical practical application. Laboratory facilities and experiences simulate those found in the cosmetology industry. Students may acquire hours transferable to a postsecondary institution for completion of hourly requirements needed to sit for the *Tennessee Cosmetology and Barber Examiners* examination.

Dual credit/dual enrollment options include:

1 hr per HS block taken during grades 10, 11, & 12 through TCAT

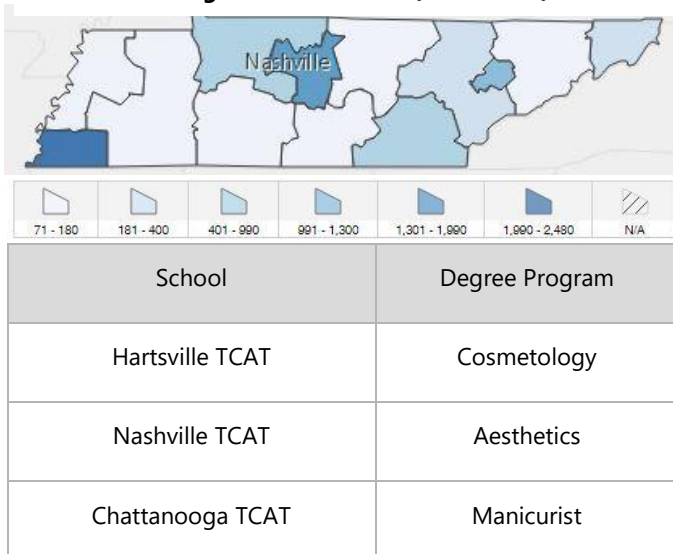


CAREER OPPORTUNITIES

The *Cosmetology* occupation group is projected to grow by 20.95 percent in Tennessee between 2014 and 2024. Job opportunities are strongest in urban and suburban areas of Tennessee. The job outlook for this program of study in Tennessee is as follows: 38.6 percent increase for skincare specialists, 21.3 percent increase for manicurists and pedicurists, and a 17.4 percent increase for hairdressers, hairstylists, and cosmetologists by 2024. Occupations with the greatest number of annual average openings include hairdressers, hairstylists, and cosmetologists.

POSTSECONDARY OPTIONS

Employment Projections for Hairdressers, Hairstylists, and Cosmetologists in Tennessee (2014-2022)



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

Cosmetology Related Occupations with the Most Annual Average Openings in Tennessee (2014-2024)

Occupations	Total Percent Change	Total Annual Avg. Openings
Hairdressers, Hairstylists, and Cosmetologists	17.40%	415
Manicurists and Pedicurists	21.30%	25
Shampoo Technician	6.50%	5
Skincare Specialists	38.60%	45
Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S Downloaded: 01/17/2018 10:05 AM		



Students in this program of study will be eligible to join SkillsUSA. In addition to school events, students will be able to compete at the regional, state, and national levels.

Through SkillsUSA, students not only learn about cosmetology knowledge and skills, but also professionalism, leadership, and workplace skills. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your advisor to learn more about SkillsUSA or visit <http://tnskillsusa.com>.

Dietetics and Nutrition

Offered at MCHS & RBSHS

HUMAN SERVICES

Level One

Level Two

Level Three

Level Four

Introduction to
Human Studies

Nutrition Across the
Lifespan - LDC

Nutrition Science
and Diet Therapy

Psychology,
Sociology, or Human
Services Practicum
(WRI)

ABOUT THE PROGRAM OF STUDY

Dietetics and Nutrition is designed to prepare students for occupations that focus on nutritional well-being, such as a dietitian or nutritional counselor. While in this program of study, students investigate human needs, nutritional requirements and issues, nutrients and their relation to disease, and disease prevention. Upon completion of this program of study, students will graduate with a professional portfolio in preparation for future training at the postsecondary level.

Dual credit/dual enrollment options include:

Nutrition Across the Lifespan
Local Dual Credit through
TTUv

Industry Certification:

**Tennessee Specific Industry
Certification for Dietetics &
Nutrition (TSIC) (n pilot)**

***Note Passing TSIC will also
qualify for State Dual Credit**

High School Dietetics & Nutrition Program of Study

CTSO Competitive Events

FCCLA: Career
Investigation,
National Programs in
Action, Nutrition and
Wellness, & Sports
Nutrition

Work-based

Learning: Career
Practicum

Human Services
Practicum

Early Postsecondary

LDC Nutrition Across
Lifespan through TTU
(MCHS only)

Industry Certification

Tennessee Specific
Industry Certification
for Dietetics & Nutrition
(TSIC) (in pilot)

Certificate

Dietary Management

TCAT Elizabethton

Tennessee Specific Industry Certification in

Dietetics and
Nutrition

Associates

A.S. Degree-Exercise Science

Nashville State
Community College

A.S. Degree- Dietetic Technician

Southwest Tennessee
Community College

Bachelors+

B.S. in Nutrition and Dietetics plus pass

CDR Examination &
Application of
RD/Nutritionist
License

Carson-Newman
College

East Tennessee State
University

Lipscomb University

Middle Tennessee
State University

Tennessee State
University

Tennessee Tech
University

University of
Memphis

University of
Tennessee

Vanderbilt University

Career Opportunities

High School Diploma

Dietary Assistant, \$21,030

Certificate

Dietary Manager, \$48,560

Associates

Dietetic Technician,
\$26,040

Dietary Aide, \$26,040

Bachelors

Dietitians & Nutritionists,
\$52,265

CAREER OPPORTUNITIES

The *Dietetics and Nutrition* occupation group is projected to grow by 17 percent in Tennessee between 2014 and 2024. Job opportunities are strongest in urban and suburban areas of Tennessee. The job outlook for this program of study in Tennessee is as follows: 14.8 percent increase for dietitians and nutritionists, 24.8 percent increase for health educators, and a 12.2 percent increase for dietetic technicians by 2024.

Employment Projections for Dietitians and Nutritionists in Tennessee (2014-2024)



POSTSECONDARY OPTIONS

<div> <div>21 - 40</div> <div>41 - 60</div> <div>61 - 80</div> <div>81 - 120</div> <div>121 - 160</div> <div>160 - 280</div> <div>N/A</div> </div>	
School	Degree Program
Nashville State Community College	Exercise Science
Southwest Tennessee Community College	Dietetic Technician
Volunteer State Community College	Health & Physical Education

For more college and career planning resources, visit <http://collegefortn.org>.



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

Dietetics and Nutrition Related Occupations with the Most Annual Average Openings in Tennessee (2014-2024)

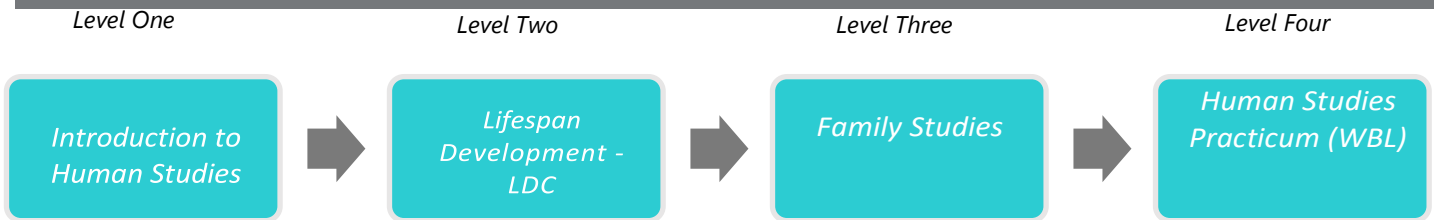
Occupations	Total Percent Change	Total Annual Avg. Openings
Athletic Trainers	12.00%	25
Community Health Workers	16.90%	30
Dietetic Technicians	12.20%	20
Dietitians and Nutritionists	14.80%	35
Health Educators	24.80%	55
Healthcare Social Workers	16.60%	135

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S
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Students in this program of study will be eligible to join FCCLA, Family, Career and Community Leaders of America. In addition to school events, students will be able to compete at the district, state, and national levels. Involvement in FCCLA offers students the opportunity to expand their leadership potential and develop skills for life—planning, goal setting, problem solving, decision making, and interpersonal communication—necessary in the home and workplace. Walk away from your high school career with experience in competing, networking, applying course content, and more! See your adviser to learn more about FCCLA or visit <http://www.tennesseefccla.org>.

HUMAN SERVICES



ABOUT THE PROGRAM OF STUDY

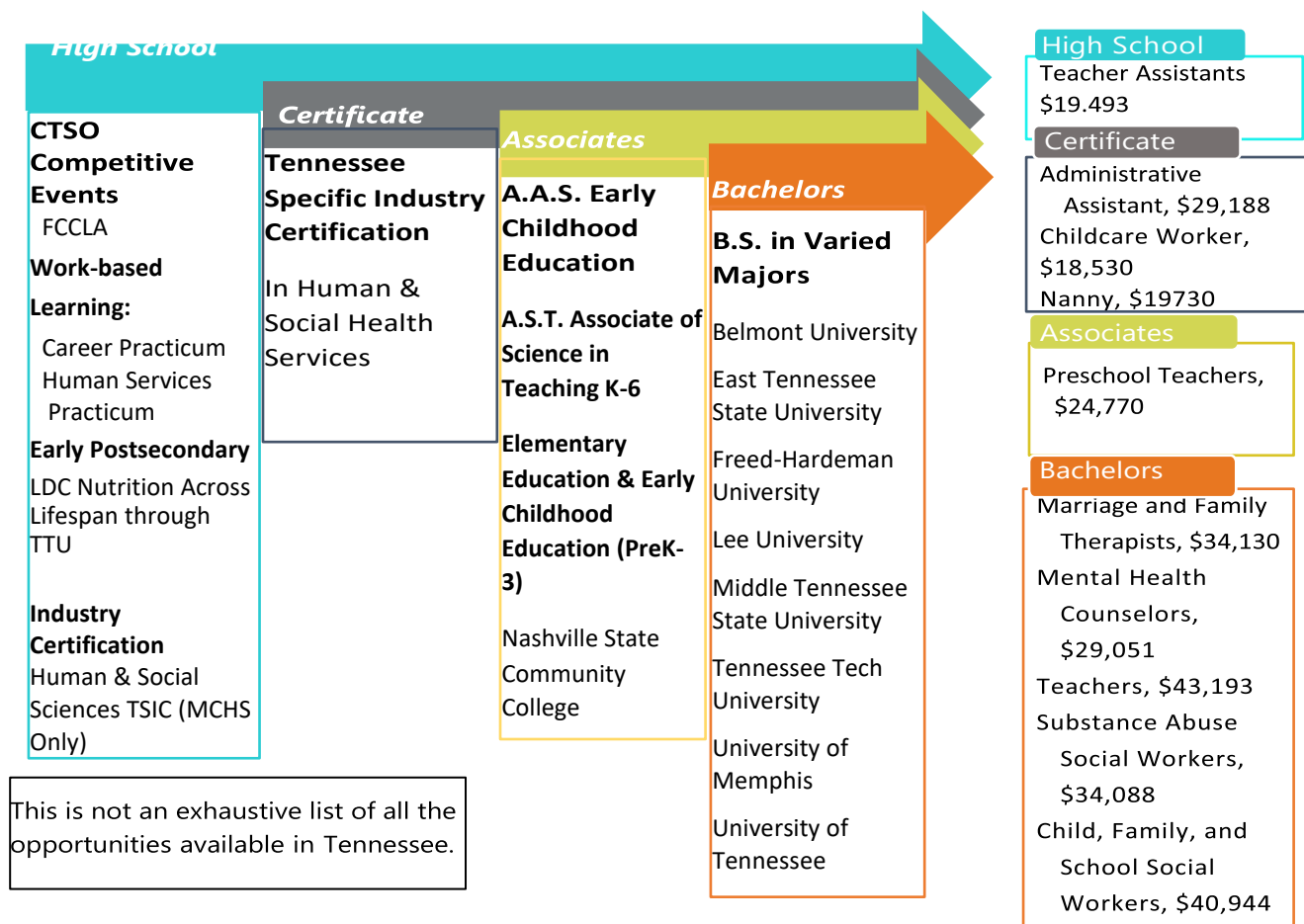
Human and Social Sciences focuses on the skills and knowledge needed for occupations that support the everyday functioning of society, such as social workers, counselors, and family mediators. While in this program of study, students investigate human needs and their impact on lifespan development, an overview of the human social services fields, communication skills, and the historical and social changes of the modern family. Upon completion of this program of study, students will compile a professional portfolio in preparation for future training at the postsecondary level.

Dual credit/ dual enrollment options include:

Lifespan Development local dual credit through TTU

Tennessee Specific Industry Certification for Human and Social Sciences (TSIC)(pilot & MCHS only)

Career Opportunities

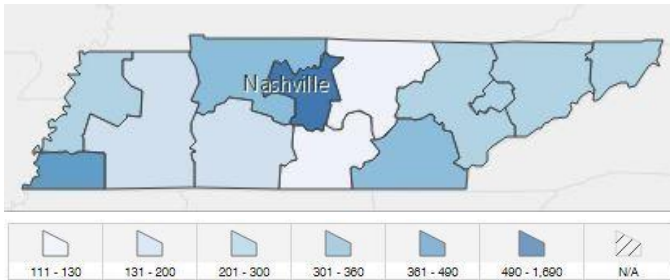


CAREER OPPORTUNITIES

The *Human and Social Sciences* occupation group is projected to grow by 19 percent in Tennessee between 2014 and 2024. Job opportunities are strong across the state of Tennessee. The job outlook for this program of study in Tennessee is as follows: 16.6 percent increase in employment for Health Care Social Workers and a 12 percent increase for Educational Counselors by 2024.

Occupations with the greatest number of annual average openings include healthcare social workers and educational counselors.

Employment Projections for Child, Family, and School Social Workers in Tennessee (2014-2022)



POSTSECONDARY OPTIONS

School	Degree Program
Nashville State Community College	Psychology; Sociology; Social Services
Southwest Tennessee Community College	Substance Abuse Counseling
Columbia State Community College	Social Work
Chattanooga State Community College	Human Services Specialist

For more college and career planning resources, visit <http://collegefortn.org>.



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College of Applied Technology (TCAT),

community college, or some two-year university programs for free!

To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

Annual Average Openings in Tennessee (2014-2024)

Occupations	Total Percent Change	Total Annual Avg. Openings
Child, Family, and School Social Workers	2.80%	120
Counselors, All Other	4.80%	15
Educational, Guidance, School, and Vocational Counselors	12.30%	160
Healthcare Social Workers	16.60%	135
Marriage and Family Therapists	5.40%	25
Mental Health and Substance Abuse Social Workers	6.30%	45
Mental Health Counselors	5.20%	70
Social and Human Service Assistants	5.50%	80
Social Workers, All Other	16.30%	35
Substance Abuse and Behavioral Disorder Counselors	9.20%	40

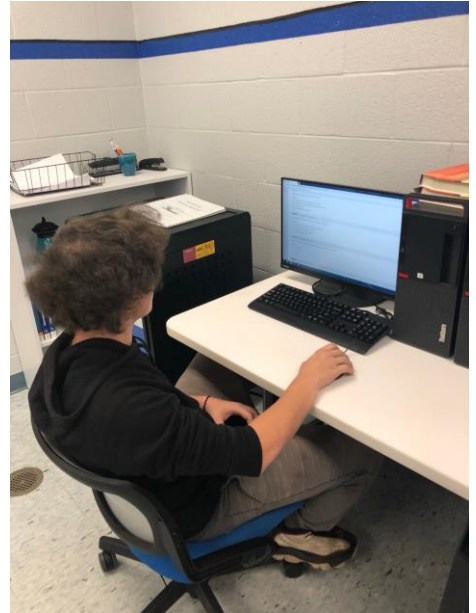
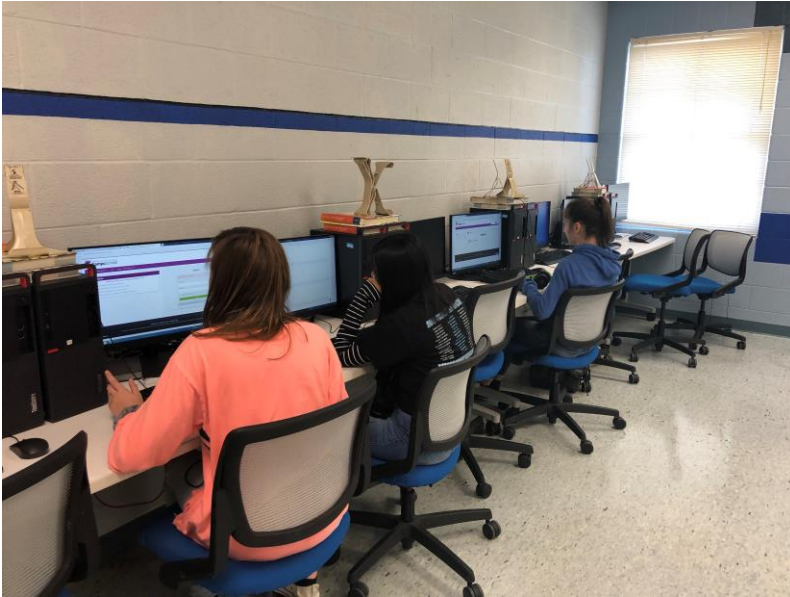
Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S

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Students in this program of study will be eligible to join FCCLA, Family, Career and Community Leaders of America. In addition to school events, students will be able to compete at the district,

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INFORMATION TECHNOLOGY



INFORMATION SYSTEMS

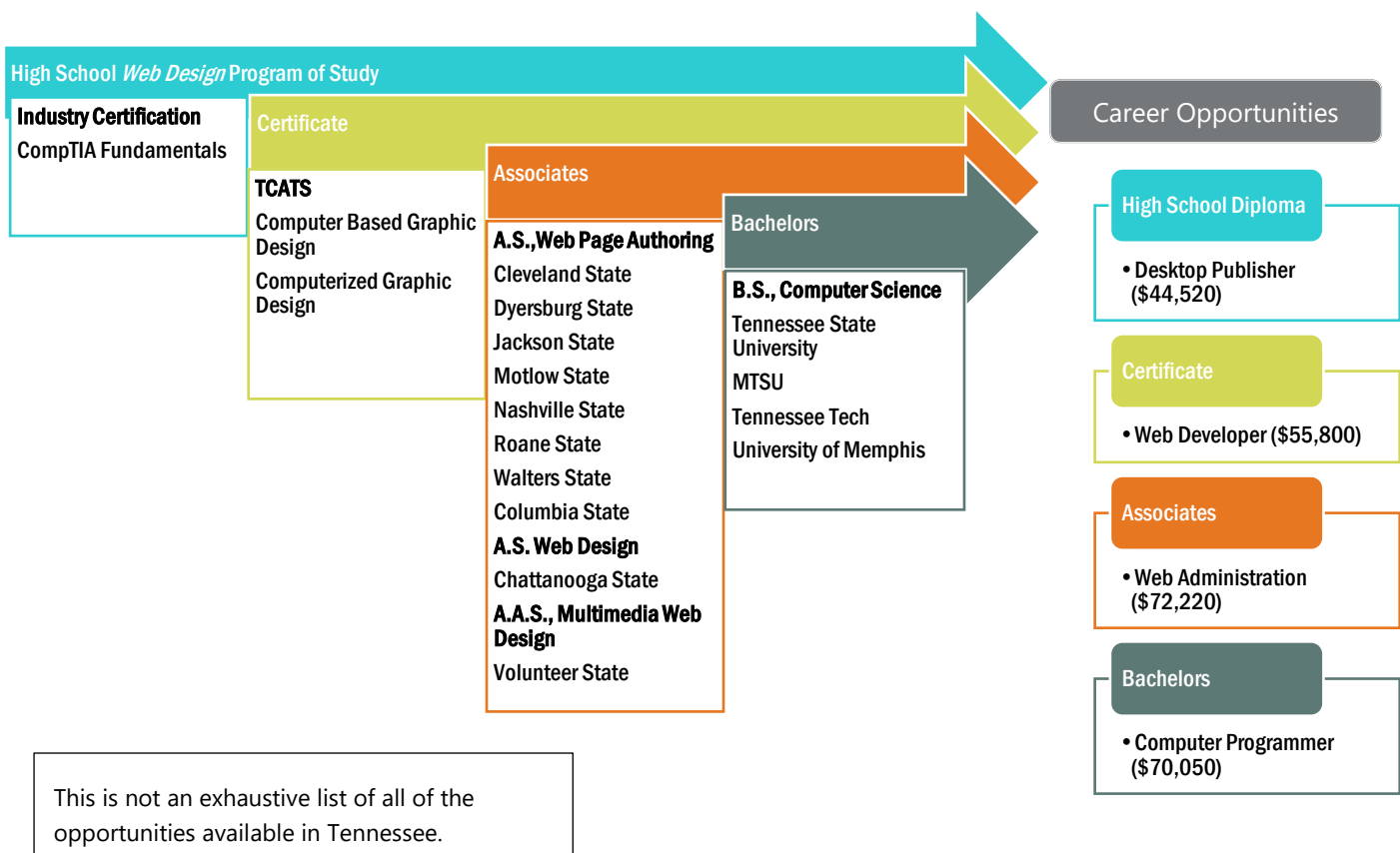


ABOUT THE PROGRAM OF STUDY

The *Web Design* program of study is designed for students interested in designing and creating websites. Students will develop fundamental skills in both theory and practical application of the basic web design and development process, project management and teamwork, troubleshooting and problem solving, and interpersonal skill development. Laboratory facilities and experiences simulate those found in the web design and development industry; where interaction with a “client” is indicated in the standards, it is expected that students’ peers or the instructor may serve as mock clients in lieu of an actual relationship with an industry partner. Emphasis is also placed on applying the design process toward projects of increasing sophistication, culminating in the production of a functional, static website. As students work toward this goal, they will acquire key skills in coding, project management, basic troubleshooting and validation, and content development and analysis.

Industry Certifications options include:

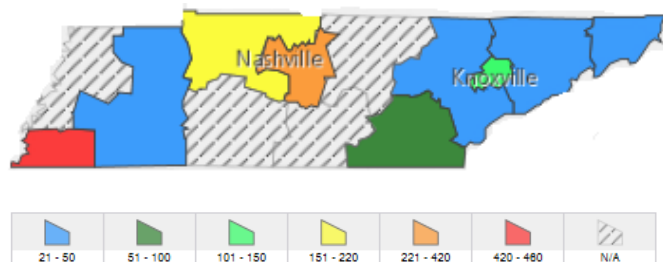
CompTIA IT Fundamentals



CAREER OPPORTUNITIES

The *Web Design* occupations group is expected to be the main driver of Web developer job growth in the next decade. As more companies expand their online retail presence, more Web developers will be needed to build the websites visited by consumers. Increased reliance on mobile search is another reason the industry's employment growth should remain strong. Further, individuals in these occupations often times move to other information technology occupations.

Employment Projections for *Web Design* careers in Tennessee



POSTSECONDARY OPTIONS

School	Degree Program
Motlow State Community College	Web Administration
Tennessee State University	Computer Programmer

For more college and career planning resources, visit <http://collegefortn.org>.

Web Design Related Occupations with the most Annual Average Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Total Percent Change
Web Developers	1,690	2,010	+19%
Web Administrators	2,130	2,160	+2%
Computer Programmers	5,320	6,120	+15%

Tennessee Department of Labor and Workforce Development, Job4TN Online. (2017). *Occupational Projections (Long-term)*. Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occproj>



Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS (STEM)

STEM



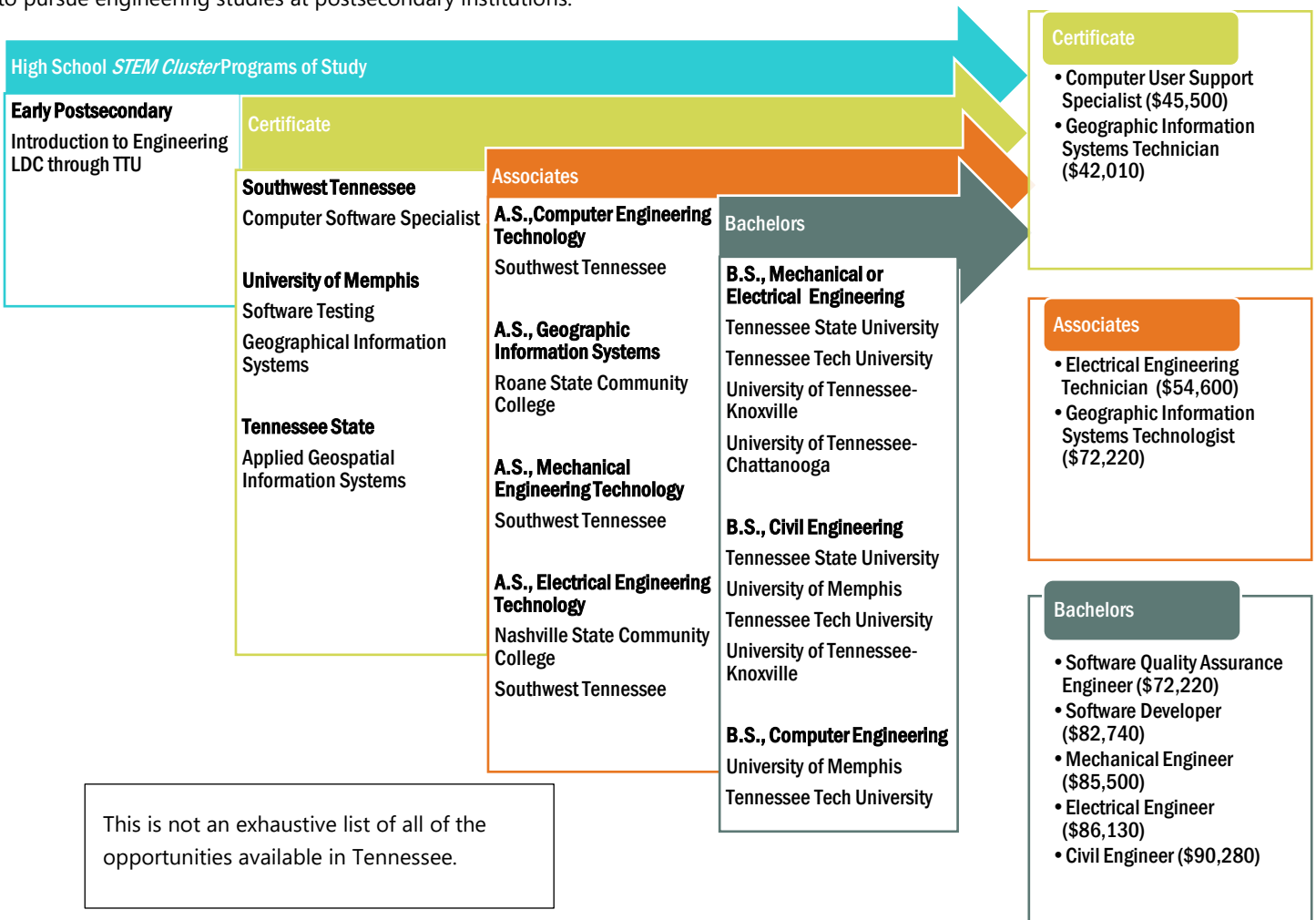
ABOUT THE PROGRAM OF STUDY

The *Engineering* program of study designed for students interested in the various disciplines of engineering and engineering technology. Course content is arranged around four sequenced, progressive courses that provide students with the opportunity to develop critical thinking skills and understanding of engineering concepts. Students then apply these skills in conjunction with the multi-step engineering design process to solve real-world problems. The capstone Engineering Practicum course places students with industry partners to complete a design project, report the results, and present their project before an audience. Students have the option to complete AP Physics as an alternative to the Engineering Practicum course. Upon completion of this POS, students will be prepared to pursue engineering studies at postsecondary institutions.

Dual credit/ dual enrollment options include:

Introduction to Engineering local dual credit (1 credit) from Tenn Tech Univ

Career Opportunities

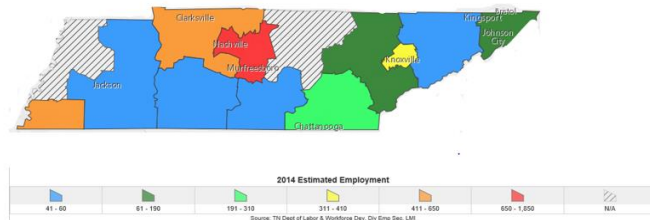




CAREER OPPORTUNITIES

As Tennessee strives to maintain and advance its economic stability and workforce, we must make it our goal to increase the number of students who come through and out of K–16 education prepared for these high-demand STEM-related careers. Unfortunately, students who choose to pursue these careers are often inadequately prepared to take on the challenges these positions demand. Secondary and postsecondary students are often lacking critical thinking, problem solving, and collaborative skills that are imperative for success. This too often affects their on the job performance. Students often struggle not only with academic knowledge when applying for a job, but they also face challenges involving real world applications like problem solving, conducting independent research, and proactively seeking solutions.

Employment Projections for *STEM* careers in Tennessee



POSTSECONDARY OPTIONS

School	Degree Program
Roane State Community College	Geographic Information Systems Technologist
Nashville State Community College	Electrical Engineering Technician
Tennessee Tech University	Civil Engineer

For more college and career planning resources, visit <http://collegefortn.org>.

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STEM Related Occupations with the most Annual Average Openings in Tennessee (2014-2024)

Occupation	2014 Estimated Employment	2024 Projected Employment	Total Percent Change
Software Developer Applications	4,840	6,160	27.00%
Mechanical Engineer	4,660	5,030	8.00%
Geospatial Information Scientists and Technologists	2,130	2,160	2.00%

Tennessee Department of Labor and Workforce Development, Job4TN Online. (2017). *Occupational Projections (Long-term)*. Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occpri>



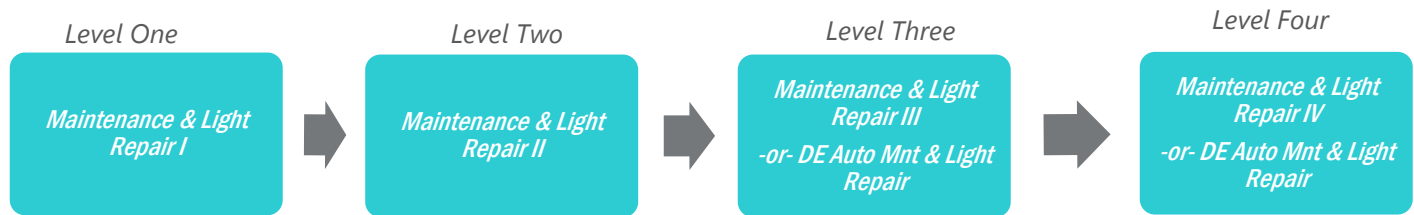
Students in this program of study will be eligible to join SkillsUSA and TSA. SkillsUSA improves the quality of America's skilled workforce through a structured program of citizenship, leadership, employability, technical and professional skills training. Visit <http://www.skillsusa.org>.



TRANSPORTATION, DISTRIBUTION, & LOGISTICS



Transportation, Distribution, & Logistics



ABOUT THE PROGRAM OF STUDY

The Automotive Maintenance and Light Repair program of study prepares students for entry into the automotive service industry with an ASE Student Certification. Students study and service automotive HVAC systems, engine performance systems, automatic and manual transmission/transaxle systems, and practice workplace soft skills. Upon completion of this program of study, students will be equipped with the knowledge and skills to be a successful automotive service technician, have satisfied course requirements to meet the National Automotive Technicians Education Foundation (NATEF) standards, and be prepared to pursue further study at a Tennessee College of Applied Technology or other postsecondary institution.

Dual credit/ dual enrollment options & available industry certification:

- ASE Student Certification- Maintenance & Light Repair
- DE 1 hr per HS block taken for grades 10, 11 & 12 through TCAT.

Career Opportunities

High School Diploma

- Automotive service technicians, \$35,020
- Tire repairers and changers, \$24,550

Certificate

- Automotive service technicians, \$35,020
- Bus and truck mechanics and diesel engine specialists, \$42,160
- Mobile heavy equipment mechanics, except engines, \$39,410
- Automotive body and related repairers, \$38,590

Associates

- Automotive service technicians, \$35,020
- Electrical and electronics engineering technicians, \$53,320
- Mechanical engineering technicians, \$51,770

Bachelors

- Mechanical engineers, \$82,210
- Electrical engineers, \$85,803

High School Automotive Maintenance & Light Repair Program of Study

Industry Certifications

Automotive Service Excellence (ASE) Student Certification- Maintenance & Light Repair
Precision Measurement Instrument Certification
CTSO Competitive Events
SkillsUSA

Work-based Learning:

Career Practicum
Early Postsecondary
DE 1 hr per HS block taken for grades 10, 11, & 12 through TCAT.

Certificate

Automotive Mechanics/ Automotive Technology

- Tennessee Colleges of Applied Technology in 24 locations

Automotive Service Technology

- Chattanooga State
- Northeast State

Mechanical Maintenance Fundamentals

- Cleveland State

Mechanical Systems

- Chattanooga State

Hybrid & Electric Vehicle Technology

- TCAT Crossville

Associates

Automotive Service Technology

- Southwest TN
- Lincoln College of Technology: Nashville
- Southern Adventist University

Mechanical Engineering Technology

- Southwest TN

Electrical Engineering Technology

- Nashville State
- Southwest TN

Bachelors

Mechanical or Electrical Engineering

- Tennessee State
- Tennessee Tech
- University of Memphis
- University of Tennessee at Chattanooga
- Lipscomb University
- Christian Brothers University
- Union University

CAREER OPPORTUNITIES

The vehicle and mobile equipment mechanics, installers, and repairers occupation group is projected to grow by 4.7 percent in Tennessee between 2014 and 2022 with a total annual average of 1,080 openings. Automotive service technicians and mechanics are projected to have the most annual average openings with 420. Related occupations requiring a bachelor's degree include mechanical engineers and electrical engineers.

Annual Average Openings for Automotive Service Technicians and Mechanics in Tennessee (2014-2022)



Source: TN Department of Labor and Workforce Development. (2015). Employment Security Division, Labor Market Information Section, on the internet at <https://www.jobs4tn.gov/> (visited Feb. 25, 2016)

POSTSECONDARY OPTIONS



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university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.

School	Degree Program
TCAT Jackson	Automotive Technology
TCAT Memphis	Automotive Technology
TCAT Newbern	Automotive Technology
TCAT Memphis	Diesel Technology
Southwest TN Community College	Automotive Service Technology
University of Memphis	Mechanical Engineering

Automotive Maintenance & Light Repair Related Occupations with the Most Annual Average Openings in Tennessee (2014-2022)

Occupation	Total Percent Change	Annual Avg. Openings
Automotive Service Technicians and Mechanics	3.0%	420
First-Line Supervisors of Mechanics, Installers, and Repairers	6.3%	335
Bus and Truck Mechanics and Diesel Engine Specialists	5.4%	170
Mechanical Engineers	5.3%	170
Tire Repairers and Changers	10.5%	125
Mobile Heavy Equipment Mechanics, Except Engines	7.6%	100
Electrical Engineers	7.5%	80
Automotive Body and Related Repairers	3.8%	75
Electrical and Electronic Engineering Technicians	0.1%	55
Electronics Engineers, Except Computer	17.3%	50

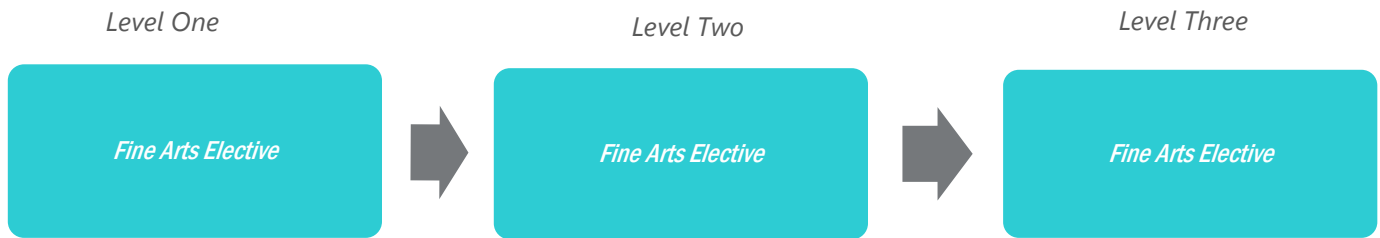
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NON-CCTE PROGRAMS OF STUDY

Non-CTE Program of Study



ABOUT THE PROGRAM OF STUDY

Students who pursue a Fine Arts program of study may take classes in music, visual, or theater arts listed below. Only three classes are required to meet the Elective Focus Area graduation requirement, though students can opt to make more classes in this area. Fine Arts is not a vocational subject, meaning it does not lead to a specific career. That doesn't mean it would not be good preparation for the world of work. A major in fine arts can help students refine creative abilities that establish a base for application to an art related career.

Dual credit/ dual enrollment options & available industry certification:

- DE through colleges can be taken in this area upon approval. Speak to the School Counselor for more information

Fine Arts Electives

General Music
Music Theory
Percussion Ensemble I, II
Visual Arts I, II
Vocal Music I
Theatre Arts I, II

*Other classes may be approved for elective credit in this area at the discretion of the School Counselor.

There is a wide range of jobs students may pursue. For example, and this is not an All-inclusive list:

Commercial Art Gallery Manager
Community Arts Worker
Exhibition Designer
Fine Artist
Graphic Designer
Illustrator
Print Maker
Art Therapist
Marketing or Advertising
Web Designer
Stylist
Production Manager
Professional Musician
Photographer
Animator
Teacher/University Lecturer
Fashion Designer

POSTSECONDARY OPTIONS

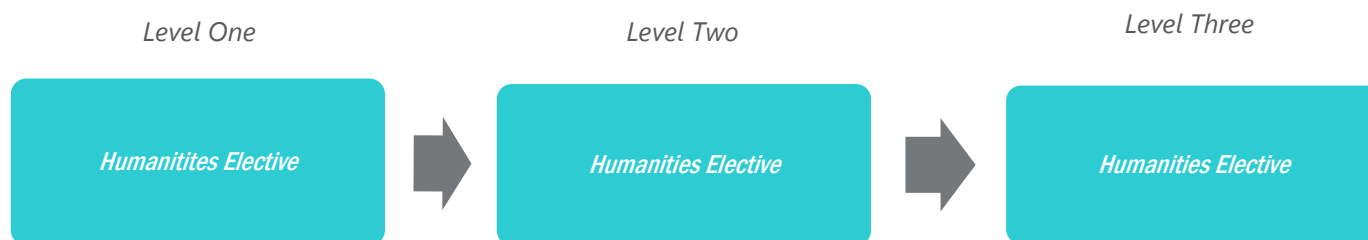
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<http://www.tennesseepromise.gov>.

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Non-CTE Program of Study



ABOUT THE PROGRAM OF STUDY

Students who pursue a Humanities program of study may take the classes below to make them better communicators, writers, or want to become well versed in one of the subject areas below. This can position a student for a variety of careers, some that require post-secondary education and others that do not.

Humanities Electives

Ancient History^{1,2}
 Contemporary Issues²
 Creative Writing¹
 Geography²
 Journalism¹
 Psychology-SDC^{1,2,3}
 Sociology-SDC^{1,2,3}
 TN History^{1,2}
 World Geography¹

¹ Class offered at MCHS

²Class offered at RBS

³SDC not offered in RBS

There is a wide range of jobs students may pursue. For example, and this is not an all-inclusive list:

Teacher
 Advertising Sales Agent
 Technical Writer
 Counseling
 Event Organizer
 Public Relation Manager
 Travel Agent
 Lawyer
 Editor
 Museum Worker/Curator
 FBI Agent
 Interpreter or Translator
 Journalist
 Human Resources Specialist
 Policeman

*Other classes may be approved for elective credit in this area at the discretion of the School Counselor.

Dual credit/ dual enrollment options & available industry certification:

- Psychology when taken at MCHS – State dual credit
- Sociology when taken at MCHS – State Dual Credit
- DE through colleges can be taken in this area upon approval. Speak to the School Counselor for more information

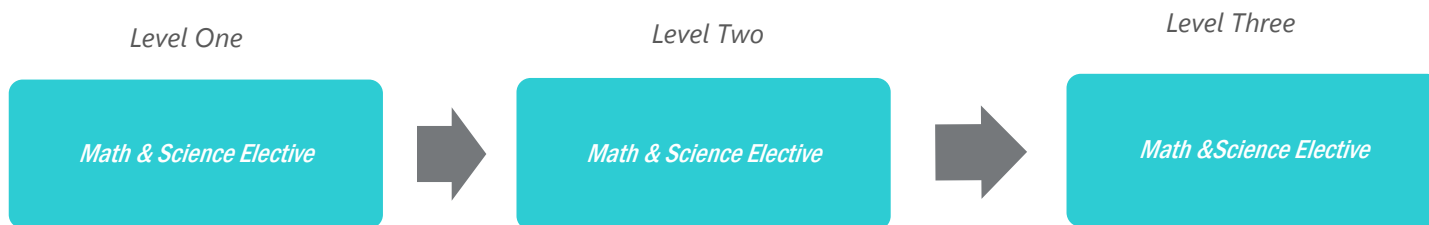
POSTSECONDARY OPTIONS

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For more college and career planning resources, visit <http://collegefortn.org>.

Non-CTE Program of Study



ABOUT THE PROGRAM OF STUDY

Students who pursue a Math and Science program of study take additional classes, above those required, in math and science as listed below. A major in math and science does not limit career options. By further evolving analytical and problem solving skills, a student becomes more prepared for post-secondary education and is able to apply these skills to a variety of career options, such as those listed below.

Math & Science Electives

Agriscience
Anatomy – Honors
Calculus – Honors
Environmental Science
Physics – Honors
Statistics – Honor, SDC
Veterinary Science

*Other classes may be approved for elective credit in this area at the discretion of the School Counselor.

There is a wide range of jobs students may pursue. For example, and this is not an all-inclusive list:

Cryptographer
Mathematician
Economist
Actuary
Financial Planner
Investment Analyst
Data Scientist
Engineer
Teacher or Professor
Pharmaceutical Sales Representative
Environmental Scientist
Medical Doctor
Occupational Health & Safety Specialist
Research Analyst
Medical Writing
Regulatory Affairs
Scientific Publishing

Dual credit/ dual enrollment options & available industry certification:

- DE through colleges can be taken in this area upon approval. Speak to the School Counselor for more information
- Statistics – SDC (SDC offered through MCHS only)

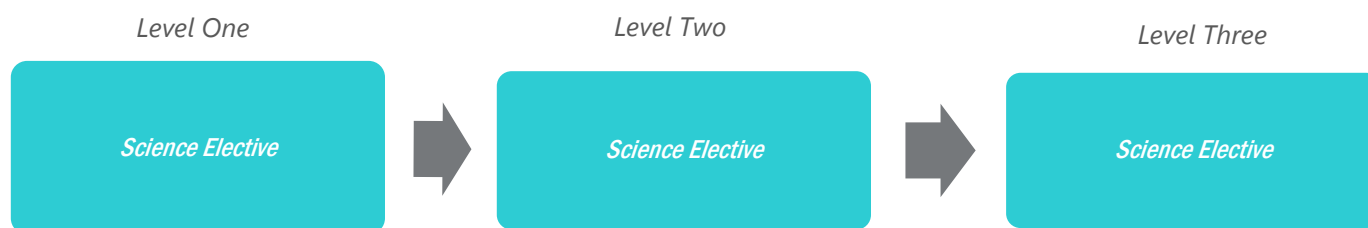
POSTSECONDARY OPTIONS

Have you registered for Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov>.



For more college and career planning resources, visit <http://collegefortn.org>.

Non-CTE Program of Study



ABOUT THE PROGRAM OF STUDY

Students who pursue a Science program of study take additional classes, above those required, in science as listed below. A major in science does not limit career options. By further evolving analytical and problem solving skills, a student becomes more prepared for post-secondary education and is able to apply these skills to a variety of career options, such as those listed below.

Math & Science Electives

Agriscience
Earth & Space Science
Ecology
Physics
Veterinary Science

*Other classes may be approved for elective credit in this area at the discretion of the School Counselor.

There is a wide range of jobs students may pursue. For example, and this is not an all-inclusive list:

Engineer
Teacher or Professor
Pharmaceutical Sales Representative
Environmental Scientist
Medical Doctor
Occupational Health & Safety Specialist
Research Analyst
Medical Writing
Regulatory Affairs
Scientific Publishing

Dual credit/ dual enrollment options & available industry certification:

- DE through colleges can be taken in this area upon approval. Speak to the School Counselor for more information
- Statistics - SDC

POSTSECONDARY OPTIONS

Have you registered for Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit



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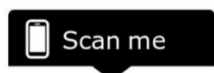
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ACRONYMS

CTE	Career and Technical Education
DE	Dual Enrollment
EFA	Elective Focus Area.
EPSO	Early Post-Secondary Opportunity.
FBLA	Future Business Leaders of America
FCCLA	Family, Career and Community Leaders of America
IC	Industry Certification
FFA	Future Farmers of American
LDC	Local Dual Credit is credit recognized only by a specific post-secondary school
POS	Program of Study
SDC	State Dual Credit
TBD	To Be Determined
TCAT	Tennessee Center for Applied Technology
TSIC	Tennessee Specific Industry Certification
TTU	Tennessee Technological University

SOCIAL MEDIA

We love to share information that can help students be more informed about college and career readiness. Connect with us on Facebook, parents and students, at Macon County Schools Career Corner to receive information about post-secondary education opportunities, success stories from former graduates, career trend information, and job openings in the area. Send success stories for review to davism@maconcountyschools.org. To join just search for **Macon County Schools Career Corner** on Facebook or scan the QR code below.



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