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## Career and Technical Education (CTE) Courses Standards

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### The Background:

T.C.A. § 49-1-302(a)(8) authorizes the State Board of Education to “set policies governing all academic standards and courses of study in the public schools.” Additionally, State Board Rule 0520-01-03-.05(1) calls for the State Board to adopt standards for each subject area, grades K-12 and Standards Review Policy 3.209 requires the Department of Education to review the Career and Technical Education (CTE) course standards at a minimum of every three (3) years. The approved standards are to be the basis for planning instructional programs in each local school system.

This item includes new and revised course standards for the following CTE career clusters:

- Advanced Manufacturing
- Agriculture, Food, and Natural Resources
- Architecture & Construction
- Arts, A/V, Technology, and Communications
- Business Management and Administration
- Education & Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections, & Security
- Marketing, Distribution and Logistics
- STEM
- Transportation
- Elective Course: Preparing for the ACT, Postsecondary, and Career
- Middle School Career Awareness, Career Exploration, and Career Advising and Planning

This item includes new courses within the following CTE career clusters:

- Agriculture, Food, and Natural Resources:
  - Agriculture, Food, and Natural Resource Practicum
- Human Services
  - Barbering IV
- Information Technology
  - Data Science I
  - Data Science II
  - Data Science III

The Department previously reviewed Career and Technical Education (CTE) courses on a three (3) year cycle; however, beginning in 2023-24 and moving forward, the Department intends to review each course annually to ensure the courses are up-to-date and align with postsecondary and workforce. Reviewing courses may not necessitate changes each year. Districts will receive prior notice of any course changes during CTE director meetings, so that they may plan for any course changes and the corresponding implications, such as staffing, curriculum, etc.

The high school CTE courses have been updated based on educator feedback to align more closely with industry and postsecondary needs. Industry partners and secondary and postsecondary educators have reviewed these new and revised standards. All career clusters listed above have proposed standards to include the importance of utilizing the engineering design process while working with a team to complete a project; the importance and integration of career and technical student organizations (CTSOs); the emphasis on the growing need for data analysis; and ethical, responsible use of artificial intelligence (AI).

Below are a summary of the revisions to each career cluster:

- The Agriculture, Food, and Natural Resources career cluster includes proposed standards incorporating the Agriscience fair; a proposed revision to standards to include native species relevant to specific biomes for identification; and a non-native species identification relevant in specific biomes. Additionally, the Agriculture, Food, and Natural Resources practicum course is being added to all programs of study.
- The Architecture & Construction career cluster includes proposed standards to understand the basics of Programmable Logic Controllers (PLCs) in an electrical system and a proposed standard to include forms for foundations and concrete work.
- The Arts, A/V Technology, and Communications career cluster includes an addition to an existing standard to include design portfolio artifact(s) and the inclusion of standards on social media marketing and social media analysis. It also includes a name change for three of the courses.
- The Business Management and Administration career cluster includes a proposed edit to an existing standard to compile the elements of the marketing research with other artifacts for inclusion in a program portfolio or design notebook to be updated throughout the program of study. There is also a proposal to merge the three programs within Business Management and Administration into one program of study.
- The Education and Training career cluster includes the addition of communication development and speech-language development to an existing standard, including physical, emotional, social, and intellectual development; an edit to include brain development, language development, reasoning capacity, and learning, including the definition of brain plasticity and how learning approach differs and how it changes over the lifespan; an addition to a standard to include communication-rich environment; how assistive technology allows access to improved learning and education for children with disabilities; and the rearrangement of standards within courses to provide better sequencing of content in Teaching as a Profession.

- The Finance career cluster includes proposed changes in the elective course, Personal Finance, to include standards on housing which includes buying and renting; emerging technologies which includes cryptocurrency; financial institutions; editing existing standards to be more inclusive of all postsecondary options; updated language on check writing; and balancing a checkbook. There is a proposal to merge the two programs, Accounting and Finance, into one single program of study.
- The Health Science career cluster includes edits to utilize Certified Nursing Aide, Nursing Home, and Health Facilities Commission to be consistent with the Health Facilities Commission. Additionally, due to a continual decline in student enrollment, standards from Public Health and Epidemiology and Medical Terminology courses are embedded into other health science courses, retiring both courses as stand-alone options.
- The Hospitality and Tourism career cluster includes the recommendation to incorporate ProStart into the program of study; edits to an existing standard to include macro and micronutrients required in the human diet; an edited standard including FCCLA Nutrition and Wellness Star Event CTSO event; and an edited standard on the marketing mix.
- The Human Services career cluster includes proposed changes to add a standard in Lifespan Development that reflects childcare standards for positive growth and development of children; an updated standard in Nutrition Science and Diet Therapy that reflects the impact of swallowing related to the disease process; standards to better meet salon safety in cosmetology that align with state board testing requirements; and barbering techniques and business standards and standards better aligned to support state board testing. Additionally, Barbering IV is being proposed as a new course.
- The Information Technology career cluster includes edits to standards that address AI-enhanced client interactions, AI-enhanced imagery in Web Design, and AI and XR in branding and marketing. Additionally, Data Science I, II, and III are being added as part of the new Data Science program of study.
- The Law, Public Safety, Corrections, and Security career cluster includes employability and career development; additional court cases; levels of force and decision-making; domestic violence; effects of trauma and coping treatment options; trauma-informed response and questioning; drug laws; Odontology; legal processes and legal writing; juvenile law; immigration law; jury selection; and trial procedures.
- The Marketing, Distribution and Logistics career cluster includes proposed changes to edit the standard on marketing and small business ownership; and tracking techniques to capture online sales and data, sales, site traffic, and purchase amounts tracked in person and online; consumer behavior, consumer/buyer decision process, business/organizational markets, marketing-channel decisions and the advantages of distribution channels, online marketing, electronic commerce, website advertisements, cookies and choices, and other modern marketing terms.
- The Transportation career cluster includes additional standards related to diagnostic challenges, damage assessment, and aircraft weight and balance.

Additional feedback will be solicited between first and final reading. Pursuant to T.C.A. § 49-1- 309, the State Board will submit the proposed changes to the education committees of the House and Senate prior to final reading. These CTE courses and standards changes will go into effect for the 2025-26 school year.

Below are the career clusters with revised course standards.

\*Indicates a proposed new course

<b>Advanced Manufacturing</b>	
Principles of Manufacturing	Revised standards
Introduction to Industrial Maintenance	Revised standards
Principles of Machining I	Revised standards
Digital Electronics	Revised standards
Welding I	Revised standards
Advanced Industrial Maintenance	Edited spelling and grammar
Manufacturing Practicum	Edited spelling and grammar
Principles of Machining II	Edited spelling and grammar
Mechatronics I	Edited spelling and grammar
Mechatronics II	Edited spelling and grammar
Robotics and Automated Systems	Edited spelling and grammar
Welding II	Edited spelling and grammar
<b>Agriculture, Food, and Natural Resources Career Cluster</b>	
Agriscience	Revised standards
Applied Environmental Science	Revised standards
Meat Science I	Revised standards
Natural Resource Management	Revised standards
Principles of Agricultural Mechanics	Revised standards
Principles of Farm and Agribusiness Management	Revised standards
Principles of Food Production	Revised standards
Principles of Plant Science and Hydroculture	Revised standards
Small Animal Science Technologies	Revised standards
*Agriculture, Food, and Natural Resources Practicum	New Course
Organizational Leadership & Communications	Edited spelling and grammar
Foundational Supervised Agricultural Experience I	Edited spelling and grammar
Foundational Supervised Agricultural Experience II	Edited spelling and grammar
Capstone Supervised Agricultural Experience	Edited spelling and grammar
Agricultural Business & Finance	Edited spelling and grammar
Agricultural Power & Equipment	Edited spelling and grammar
Agricultural Fabrication and Biosystems Engineering	Edited spelling and grammar
Unmanned Aircraft Systems in Agriculture	Edited spelling and grammar
Plant & Soil Science	Edited spelling and grammar
Food Science & Safety	Edited spelling and grammar
Advanced Food Science	Edited spelling and grammar
Greenhouse Management	Edited spelling and grammar
Landscaping & Turf Science	Edited spelling and grammar
Meat Science II	Edited spelling and grammar
Meat Science III	Edited spelling and grammar

Large Animal Science Technologies	Edited spelling and grammar
Veterinary Science Technologies	Edited spelling and grammar
Equine Science	Edited spelling and grammar
Floral Design	Edited spelling and grammar
Introduction to Geographic Information Systems	Edited spelling and grammar
Exploring Agricultural Education	Edited spelling and grammar
Introduction to Agricultural Education	Edited spelling and grammar
Introduction to Agricultural Sciences	Edited spelling and grammar
<b>Architecture &amp; Construction</b>	
Architectural & Engineering Design I	Revised standards
Architectural & Engineering Design II	Revised standards
Electrical Systems	Revised standards
Foundations of Interior Design	Revised standards
Fundamentals of Construction	Revised standards
Mechanical, Electrical, and Plumbing (MEP) Systems	Revised standards
Residential & Commercial Construction I	Revised standards
Residential Interior Design	Revised standards
Structural Systems I	Revised standards
Advanced Interior Design	Edited spelling and grammar
Commercial Interior Design	Edited spelling and grammar
Architectural & Engineering Design III	Edited spelling and grammar
HVAC	Edited spelling and grammar
Plumbing Systems	Edited spelling and grammar
Construction Practicum	Edited spelling and grammar
Residential & Commercial Construction II	Edited spelling and grammar
Structural Systems II	Edited spelling and grammar
<b>Arts, Audio/Visual Technology, &amp; Communications</b>	
Advanced Fashion Design	Proposed Name Change
A/V Production I	Revised Standards
A/V Production II	Revised Standards
Digital Arts & Design I	Revised Standards
Digital Arts & Design II	Revised Standards
Fashion Design	Revised Standards; Proposed Name change
Foundations of Fashion Design	Revised Standards; Proposed Name change
Applied Arts Practicum	Edited spelling and grammar
A/V Production III	Edited spelling and grammar
Digital Arts & Design III	Edited spelling and grammar
<b>Business Management &amp; Administration</b>	
Introduction to Business & Marketing	Revised Standards
Business Communications	Revised Standards
Health Information Technology	Revised Standards
Principles of Office Applications	Revised Standards
Advanced Office Applications	Edited spelling and grammar
American Business Legal Systems	Edited spelling and grammar
Business Management	Edited spelling and grammar
Business Economics	Edited spelling and grammar
Business & Entrepreneurship Practicum	Edited spelling and grammar

Health Services Administration Practicum	Edited spelling and grammar
Exploring Business & Marketing	Edited spelling and grammar
Computer Applications	Edited spelling and grammar
Keyboarding Fundamentals	Edited spelling and grammar
<b>Education &amp; Training</b>	
Educational Guidance and Social Services I	Revised Standards
Educational Guidance and Social Services II	Revised Standards
Introduction to Teaching as a Profession	Revised Standards
Teaching as a Profession I	Revised Standards
Teaching as a Profession II	Revised Standards
Teaching as a Profession Practicum	Revised Standards
Educational Guidance and Social Services III	Edited spelling and grammar
Educational Guidance and Social Services IV	Edited spelling and grammar
Foundational Literacy Practicum	Edited spelling and grammar
<b>Finance</b>	
Accounting I	Revised Standards
Personal Finance	Revised Standards
Accounting II	Edited spelling and grammar
Financial Planning	Edited spelling and grammar
Banking & Finance	Edited spelling and grammar
<b>Government and Public Administration</b>	
Public Management and Administration	Reformat, Edited spelling and grammar
<b>Health Science</b>	
Human Anatomy & Physiology	Revised Standards
Diagnostic Medicine	Revised Standards
Emergency Medical Services Practicum	Revised Standards
Health Science Education	Revised Standards
Medical Therapeutics	Revised Standards
Nursing Education	Revised Standards
Rehabilitation Careers	Revised Standards
Behavioral Health	Edited spelling and grammar
Behavioral Health Practicum	Edited spelling and grammar
Cardiovascular Services	Edited spelling and grammar
Clinical Internship	Edited spelling and grammar
Dental Science	Edited spelling and grammar
Emergency Medical Services	Edited spelling and grammar
Exercise Science	Edited spelling and grammar
Medical Assisting	Edited spelling and grammar
Pharmacological Sciences	Edited spelling and grammar
Introduction to Health Science	Edited spelling and grammar
Public Health and Epidemiology	Retire
Medical Terminology	Retire
<b>Hospitality &amp; Tourism</b>	
Culinary Arts I	Revised Standards
Culinary Arts II	Revised Standards
Hospitality & Tourism Management I	Revised Standards

Hospitality & Tourism Management II	Revised Standards
Culinary Arts III	Edited spelling and grammar
Culinary Arts IV	Edited spelling and grammar
Hospitality & Tourism Management III	Edited spelling and grammar
Event Planning & Management	Edited spelling and grammar
<b>Human Services</b>	
Barbering I	Revised Standards
Barbering II	Revised Standards
Barbering III	Revised Standards
*Barbering IV	New Course
Cosmetology I	Revised Standards
Cosmetology II	Revised Standards
Cosmetology IV	Revised Standards
Introduction to Human Studies	Revised Standards
Lifespan Development	Revised Standards
Nutrition Across the Lifespan	Revised Standards
Nutrition Science Diet & Therapy	Revised Standards
Cosmetology III	Edited spelling and grammar
Family Studies	Edited spelling and grammar
Human Services Practicum	Edited spelling and grammar
Introduction to Social Health	Edited spelling and grammar
<b>Information Technology</b>	
Coding I	Revised Standards
Computer Systems	Revised Standards
Computer Science Foundations	Revised Standards
Cybersecurity I	Revised Standards
Web Design Foundations	Revised Standards
*Data Science I	New Course
*Data Science II	New Course
*Data Science III	New Course
Cabling & Internetworking	Edited spelling and grammar
Coding II	Edited spelling and grammar
Coding Practicum	Edited spelling and grammar
Cybersecurity II	Edited spelling and grammar
Cybersecurity Practicum	Edited spelling and grammar
IT Clinical Internship	Edited spelling and grammar
Mobile App Development	Edited spelling and grammar
Networking	Edited spelling and grammar
Web Design Practicum	Edited spelling and grammar
Web Site Development	Edited spelling and grammar
<b>Law, Public Safety, Corrections, &amp; Security</b>	
Criminal Justice I	Revised Standards
Criminal Justice II	Revised Standards
Criminal Justice III: Forensic Criminal Investigations	Revised Standards
Criminal Justice Practicum	Revised Standards
Unmanned Aircraft Systems for Criminal Justice	Revised Standards

Fire Prevention	Revised Standards
Fire Science I	Revised Standards
Fire Science II	Revised Standards
Principles of Fire & Emergency Services	Revised Standards
Pre-Law I	Revised Standards
Pre-Law II	Revised Standards
Pre-Law III	Revised Standards
Pre-Law Practicum	Revised Standards
<b>Marketing, Distribution and Logistics</b>	
Introduction to Entrepreneurship	Revised Standards
Marketing & Management I: Principles	Revised Standards
Marketing & Management II: Advanced Strategies	Revised Standards
Supply Chain Management I: Foundations & Principles	Revised Standards
Supply Chain Management III: Management and Logistics	Revised Standard
Advertising & Public Relations	Edited spelling and grammar
Entrepreneurship	Edited spelling and grammar
Retail Operations	Edited spelling and grammar
Supply Chain Management II: Warehousing and Distribution	Edited spelling and grammar
Supply Chain Management Practicum	Edited spelling and grammar
Social Media and Analytics	Edited spelling and grammar
<b>STEM</b>	
Digital Electronics	Revised Standards
Principles of Engineering & Technology	Revised Standards
STEM I: Foundation	Revised Standards
BioSTEM I	Revised Standards
BioSTEM II	Revised Standards
STEM Explorers	Revised Standards
STEM Innovators	Revised Standards
Engineering Design II	Revised Standards
STEM Designers	Revised Standards
Engineering Design I	Edited spelling and grammar
Engineering Practicum	Edited spelling and grammar
STEM II: Applications	Edited spelling and grammar
BioSTEM III	Edited spelling and grammar
BioSTEM Practicum	Edited spelling and grammar
STEM III: STEM in Context	Edited spelling and grammar
STEM IV Practicum	Edited spelling and grammar
<b>Transportation</b>	
Aviation I: Principles of Flight	Revised Standards
Collision Repair: Non-Structural	Revised Standards
Introduction to Collision Repair	Revised Standards
Introduction to Aerospace	Revised Standards
Maintenance and Light Repair I	Revised Standards
Maintenance and Light Repair II	Revised Standards
Maintenance and Light Repair III	Revised Standards
Maintenance and Light Repair IV	Revised Standards

Aviation II: Advanced Flight	Edited spelling and grammar
Collision Repair: Damage Analysis, Estimating, and Customer Service	Edited spelling and grammar
Collision Repair: Painting & Refinishing	Edited spelling and grammar
Unmanned Aircraft Systems Pilot	Edited spelling and grammar
<b>Middle School Career Awareness Courses</b>	
Career Awareness	Reformatted; Edited spelling and grammar
Career Exploration	Reformatted; Edited spelling and grammar
Career Advisement and Planning	Reformatted; Edited spelling and grammar
<b>Elective Course</b>	
Preparing for the ACT, Postsecondary, and Career	Revised Standards

**The Fiscal Analysis Impact:**

T.C.A. § 49-1-212 requires that the Department prepare a fiscal analysis of any policy, rule, or regulation proposed to the State Board of Education. This item has no financial impact on an LEA.

**Connection to the [Master Plan](#):**

This item supports the State Board’s strategic focus on postsecondary and career outlined in the Master Plan by ensuring that students develop and demonstrate readiness for their postsecondary or career plans.

**The Recommendation:**

The Department of Education recommends acceptance of this item on first reading. The SBE staff concurs with this recommendation.