West Virginia CTE

CTE (2015): Grades 9, 10, 11, 12

Adopted 2015

Agriculture, Food & Natural Resources

Agribusiness Systems

1. Apply management planning principles in AFNR businesses.
2. Use record keeping to accomplish AFNR business objectives, manage budgets, and comply with laws and regulations.
3. Manage cash budgets, credit budgets and credit for an AFNR business using generally accepted accounting principles.
4. Develop a business plan for an AFNR business.
5. Use sales and marketing principles to accomplish AFNR business objectives.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Animal Systems

1. Analyze historic and current trends impacting the animal systems industry.
2. Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.
3. Design and provide proper animal nutrition to achieve desired outcomes for performance, development, reproduction and/or economic production.
4. Apply principles of animal reproduction to achieve desired outcomes for performance, development and/or economic production.
5. Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.
6. Classify, evaluate and select animals based on anatomical and physiological characteristics.
7. Apply principles of effective animal health care.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Environmental Science Systems

- Use analytical procedures and instruments to manage environmental service systems.

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2. Evaluate the impact of public policies and regulations on environmental service system operations. Develop proposed solutions to environmental issues, problems and applications using scientific principles of meteorology, soil science, hydrology, microbiology, chemistry and ecology.
3. Demonstrate the operation of environmental service systems (e.g., pollution control, water treatment, wastewater treatment, solid waste management and energy conservation).
4. Use tools, equipment, machinery and technology common to tasks in environmental service systems.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Food Products & Processing Systems

1. Develop and implement procedures to ensure safety, sanitation and quality in food product and processing facilities.
2. Apply principles of nutrition, biology, microbiology, chemistry and human behavior to the development of food products.
3. Select and process food products for storage, distribution and consumption.
4. Explain the scope of the food industry and the historical and current developments of food products and processing.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Natural Resources Systems

1. Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals.
2. Analyze the interrelationships between natural resources and humans.
3. Develop plans to ensure sustainable production and processing of natural resources.
4. Demonstrate responsible management procedures and techniques to protect or maintain natural resources.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Plant Systems

1. Develop and implement a crop management plan for a given production goal that accounts for environmental factors.
2. Apply the principles of classification, plant anatomy and plant physiology to plant production and management.

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Propagate, culture and harvest plants and plant products based on current industry standards.

4. Apply principles of design in plant systems to enhance an environment (e.g., floral, forest, landscape and farm).
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Power, Structural & Technical Systems

1. Apply physical science principles and engineering applications to solve problems and improve performance in AFNR power, structural and technical systems.
2. Operate and maintain AFNR mechanical equipment and power systems.
3. Service and repair AFNR mechanical equipment and power systems.
4. Plan, build and maintain AFNR structures.
5. Use control, monitoring, geospatial and other technologies in AFNR power, structural and technical systems.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Architecture & Construction

Construction

1. Describe contractual relationships between all parties involved in the building process.
2. Describe the approval procedures required for successful completion of a construction project.
3. Implement testing and inspection procedures to ensure successful completion of a construction project.
4. Apply scheduling practices to ensure the successful completion of a construction project.
5. Apply practices and procedures required to maintain jobsite safety.
6. Manage relationships with internal and external parties to successfully complete construction projects.
7. Compare and contrast the building systems and components required for a construction project.
8. Demonstrate the construction crafts required for each phase of a construction project.
9. Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
10. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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esign/Pre-construction

1. Justify design solutions through the use of research documentation and analysis of data.
2. Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
3. Describe the requirements of the integral systems that impact the design of buildings.
4. Apply building codes, laws and rules in the project design.
5. Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
6. Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
7. Employ appropriate representational media to communicate concepts and project design.
8. Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.
9. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Maintenance/Operations

1. Recognize and employ universal construction signs and symbols to function safely in the workplace.
2. Use troubleshooting procedures when solving a maintenance problem in buildings.
3. Apply construction skills when repairing, restoring or renovating existing buildings.
4. Determine work required to repair or renovate an existing building.
5. Plan and practice preventative maintenance activities to service existing buildings.
6. Maintain and inspect building systems to achieve safe and efficient operation of buildings.
7. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Arts, A/V Technology & Communications

A/V Technology & Film

1. Describe the history, terminology, occupations and value of audio, video and film technology.
2. Demonstrate the use of basic tools and equipment used in audio, video and film production.
3. Demonstrate technical support skills for audio, video and/or film productions.

Design an audio, video and/or film production.

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5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Journalism & Broadcasting

1. Describe the diversity of functions within the Journalism & Broadcasting Career Pathway.
2. Demonstrate writing processes used in journalism and broadcasting.
3. Plan and deliver a media production (e.g., broadcast, video, Internet, mobile).
4. Demonstrate technical support related to media production (e.g., broadcast, video, Internet, mobile).
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Performing Arts

1. Describe the scope of the Performing Arts Career Pathway and the roles of various individuals in it.
2. Demonstrate the fundamental elements, techniques, principles and processes of various dance styles and traditions.
3. Perform a varied repertoire of vocal and/or instrumental music representing diverse styles, cultures and historical periods.
4. Demonstrate knowledge of music theory.
5. Explain key issues affecting the creation of characters, acting skills and roles.
6. Create stage, film, television or electronic media scripts in a variety of traditional and current formats.
7. Describe how technology and technical support enhance performing arts productions.
8. Analyze all facets of stage and performing arts production management.
9. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Printing Technology

1. Manage the printing process, including customer service and sales, scheduling, production and quality control.
2. Demonstrate the production of various print, multimedia or digital media products.
3. Perform finishing and distribution operations related to the printing process.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Telecommunications

1. Demonstrate the use of telecommunications terminology, tools and test equipment.
2. Demonstrate telecommunication installation processes using appropriate tools, materials, schematics, diagrams, blueprints and industry specific codes and regulations.
3. Demonstrate decision making, problem-solving techniques and communication skills when providing services for customers.
4. Demonstrate the installation, repair and delivery of network systems.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Visual Arts

1. Describe the history and evolution of the visual arts and its role in and impact on society.
2. Analyze how the application of visual arts elements and principles of design communicate and express ideas.
3. Analyze and create two and three-dimensional visual art forms using various media.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Business Management & Administration

Administrative Support

1. Plan, staff, lead and organize human resources to enhance employee productivity and satisfaction.
2. Access, evaluate and disseminate information for business decision making.
3. Plan, monitor and manage day-today business activities.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Business Information Management

1. Apply knowledge of business contracts to establish business relationships by discussing the nature of contract suspensions and terminations.
2. Demonstrate the use of cost accounting methods to guide business decisions pertaining to quality.
3. Use database software to create databases that could facilitate business decision-making by explaining the principals of data analysis.
4. Apply data mining methods to acquire pertinent information for business decision-making.
5. Explain methods used to develop the technological infrastructure.

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6. Utilize project management processes to plan a business project through initiation and design of the project.
7. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

General Management

1. Describe and follow laws and regulations affecting business operations and transactions.
2. Plan, monitor, manage and maintain the use of financial resources to ensure a business's financial wellbeing.
3. Access, evaluate and disseminate information for business decision making.
4. Plan, monitor and manage day-to-day business activities to sustain continued business functioning.
5. Plan, organize and manage an organization/department to achieve business goals.
6. Access, evaluate and disseminate information for business decision making.
7. Apply economic concepts fundamental to global business operations.
8. Employ management techniques, strategies and systems to enhance business relationships.
9. Create strategic plans used to manage business growth, profit and goals.
10. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Human Resources Management

1. Describe and follow laws and regulations affecting human resource operations.
2. Access, evaluate and disseminate information for human resources management decision making.
3. Motivate and supervise personnel to achieve completion of projects and business goals.
4. Plan, monitor and manage the use of financial and human resources to ensure a business's financial wellbeing.
5. Plan, staff, lead and organize human resources to enhance employee productivity and satisfaction.
6. Plan, monitor and manage day-to-day business activities to foster a healthy and safe work environment.
7. Plan, organize and implement compensation, benefits, health and safety programs.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Operations Management

1. Describe and follow laws and regulations affecting business operations and transactions.
2. Develop and maintain positive customer relationships.
3. Apply inventory tracking systems to facilitate operational controls.
4. Plan, monitor and manage day-to-day business activities to maintain and improve operational functions.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Education & Training

Administration & Administration Support

1. Use research-based practices to develop, communicate and enlist support for a vision of success for all learners.
2. Identify behaviors necessary for developing and sustaining a positive learning culture.
3. Create instructional programs to meet the learning organization's objectives.
4. Identify instructional practices that meet the learning organization's objectives.
5. Model leadership skills for personnel in order to improve the performance of the learning organization.
6. Identify operations to meet the learning organization's objectives.
7. Plan strategically to meet the learning organization's objectives.
8. Apply internal and external resources to meet the learning organization's objectives and learner needs.
9. Describe advocacy strategies to promote the learning organization's needs.
10. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Professional Support Services

1. Identify strategies, techniques and tools used to determine the needs of diverse learners.
2. Implement methods to enhance learner success.
3. Identify resources and support services to meet learners' needs.
4. Identify resources and support services available in the learning organization to enhance the learning environment.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Teaching/Training

1. Use foundational knowledge of subject matter to plan and prepare effective instruction and design courses or programs.
2. Employ knowledge of learning and developmental theory to describe individual learners.
3. Use content knowledge and skills of instruction to develop standards-based goals and assessments.
4. Identify materials and resources needed to support instructional plans.
5. Establish a positive climate to promote learning.
6. Identify motivational, social and psychological practices that guide personal conduct.
7. Demonstrate organizational and relationship building skills used to manage instructional activities and related procedures.
8. Demonstrate flexibility and adaptability in instructional planning.
9. Utilize assessment and evaluation tools and data to advance learner achievement and adjust instructional plans.
10. Evaluate teaching and training performance indicators to determine and improve effectiveness of instructional practices and professional development.
11. Implement strategies to maintain relationships with others to increase support for the organization.
12. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Finance

Banking Services

1. Describe and follow laws and regulations to manage business operations and transactions in the banking services industry.
2. Create and maintain positive, ongoing relationships with banking customers.
3. Manage the use of financial resources to enhance banking performance.
4. Demonstrate the use of banking technology and equipment.
5. Plan, monitor and manage the day-to-day activities within a banking organization to ensure secure operations.
6. Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop a career in banking services.
7. Determine client needs and wants and respond through planned, personalized communication to guide purchase decisions and enhance future business opportunities in banking services.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Business Finance

1. Describe laws and regulations in needed to manage business operations and transactions in corporate finance.
2. Explain the role of the U.S. Securities and Exchange Commission in the regulation of corporate finance.
3. Describe fundamental financial concepts involved in the management of corporate finances.
4. Perform calculations necessary for capital budgeting decision-making.
5. Conduct cash flow analysis to select an acceptable capital expenditure.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Insurance

1. Describe and follow laws and regulations to manage business operations and transactions in the insurance industry.
2. Plan, monitor and manage day-to-day insurance organization activities.
3. Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop a career in insurance.
4. Demonstrate underwriting techniques and strategies to evaluate the risk posed by potential insurance clients.
5. Determine client needs and wants and respond through planned, personalized communication to guide purchase decisions and enhance future insurance business opportunities.

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6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Securities & Investments

1. Describe and follow laws and regulations to manage business operations and transactions in the securities and investments industry.
2. Manage the use of financial resources to perform key duties in the securities and investments industry.
3. Plan, monitor and manage day-to-day securities and investments operations.
4. Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop in a securities and investments career.
5. Determine client needs and wants and respond through planned, personalized communication to guide purchase decisions and enhance future securities and investments opportunities.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Government & Public Administration

Foreign Service

1. Apply the knowledge acquired from history, law, geography, science, language studies, social sciences (including economic and political science), business, foreign policy and culture to perform diplomatic functions.
2. Describe the laws, customs and current administrative practices of the United States and host countries used to manage administrative, social and policy matters.
3. Describe the application of United States and host country laws, regulations, policies and procedures used to manage consular administrative matters.
4. Describe the application of host country laws, customs and effective administrative practices used to manage the conduct of diplomatic operations.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Governance

1. Employ research skills to gather and document factual information, analyze data and interpret statistics applicable to matters of public policy.
2. Develop and articulate reasoned, persuasive arguments to support public policy options or positions.
3. Select and apply appropriate political processes to gain consensus for the resolution of differing opinions and positions.

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Advocate to gain support for new laws, regulations, ordinances, programs or procedures; alternatively, advocate to gain support to reform or revoke existing laws, regulations, ordinances, programs or procedures.

5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

National Security

1. Instruct persons who will perform tasks relating to national homeland security.
2. Describe the appropriate duties, responsibilities and authority of a national security agency's personnel at all levels.
3. Describe the leadership characteristics necessary to ensure compliance with rules of engagement and applicable ethical standards.
4. Collect and analyze information from within and outside the United States to assess threats and opportunities regarding national security.
5. Develop strategies to defend against and respond to the effects of chemical, biological, radiological, nuclear (CBRN) or other emergent events.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Planning

1. Explain the planning process used to support the development and implementation of new and updated plans, programs and regulations for government and public administration agencies.
2. Develop a comprehensive and focused strategic planning process for government and public administration agencies to manage change.
3. Formulate plans and policies that meet the social, economic and physical needs of the public.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Public Management & Administration

1. Describe the organization of a government or public administration department or agency.
2. Design strategies to maximize the potential of a government or public administration department or agency to meet its vision, mission and goals.
3. Utilize fiscal management skills to manage budget and allocation processes to ensure that resources are applied in a manner consistent with the department or agency's vision, mission and goals.
4. Facilitate the flow of ideas and information to keep the department or agency and its constituency informed of policies and operations.

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Create plans that utilize department or agency expertise to help elected officials and others identify, implement, and achieve common goals and objectives.

6. Use analysis, planning and fiscal services to fund department or agency priorities.
7. Describe ethical and fiscally responsible procurement systems and procedures used to meet department or agency needs.
8. Prepare procurement requirements, procedures and solicitations for bids or proposals.
9. Evaluate bids and proposals consistent with the requirements of the procurement process.
10. Describe the oversight of awarded contracts to ensure the ethical and optimal use of public funds.
11. Describe laws and policies that are used to protect or disclose information.
12. Develop strategies that encourage a creative and innovative environment in a government or public administration department or agency.
13. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Revenue & Taxation

1. Examine evidence and ensure revenue compliance by interpreting applicable laws, applying appropriate investigative principles and following relevant procedures.
2. Acquire, analyze and disseminate information to facilitate clear and accurate communication with revenue and taxation stakeholders.
3. Design, develop, operate and review data analysis systems and procedures to minimize and eliminate revenue-related financial problems.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Regulation

1. Describe dimensional, operational, and process inspections that would enforce compliance with legal requirements and regulatory standards.
2. Compare and contrast options for achieving an acceptable degree of compliance and the consequences of degrees of noncompliance.
3. Explore a variety of options to achieve compliance with regulatory standards such as conducting inquiries and proceedings according to due process of law.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Health Science

Biotechnology Research & Development

- Summarize the goals of biotechnology research and development within legal and ethical protocols.

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2. Apply the fundamentals of biochemistry, cell biology, genetics, mathematical concepts, microbiology, molecular biology, organic chemistry and statistics to conduct effective biotechnology research and development of products.
3. Demonstrate basic knowledge of recombinant DNA, genetic engineering, bioprocessing, monoclonal antibody production, nanotechnology, bioinformatics, genomics, proteomics and transcriptomics to conduct biotechnology research and development.
4. Demonstrate the principles of solution preparation, sterile techniques, contamination control, and measurement and calibration of instruments used in biotechnology research.
5. Determine processes for product design and production and how that work contributes to an understanding of the biotechnology product development process.
6. Summarize and explain the larger ethical, moral and legal issues related to biotechnology research, product development and use in society.
7. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Diagnostic Services

1. Communicate key diagnostic information to healthcare workers and patients in an accurate and timely manner.
2. Assess and report patient's/client's health status in order to monitor and document patient progress.
3. Demonstrate the principles of body mechanics for positioning, transferring and transporting of patients/clients, and perform them without injury to the patient/client or self.
4. Explain procedures and goals to the patient/client accurately and effectively, using strategies to respond to questions and concerns.
5. Select, demonstrate and interpret diagnostic procedures.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Health Informatics

1. Communicate health information accurately and within legal and regulatory guidelines, upholding the strictest standards of confidentiality.
2. Describe the content and diverse uses of health information.
3. Demonstrate the use of systems used to capture, retrieve and maintain confidential health information from internal and external sources.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Support Services

1. Describe, differentiate and safely perform the responsibilities of healthcare support services roles.
2. Demonstrate work practices that maintain a clean and healthy healthcare facility to reduce or eliminate pathogenic organisms.
3. Follow established internal and external guidelines in order to provide high-quality, effective support services in the healthcare facility.
4. Maximize available resources for proper care and use of healthcare equipment and materials.
5. Implement healthcare facility standards in order to maintain high-quality healthcare facilities.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Therapeutic Services

1. Utilize communication strategies to answer patient/client questions and concerns on planned procedures and goals.
2. Communicate patient/client information among healthcare team members to facilitate a team approach to patient care.
3. Utilize processes for assessing, monitoring and reporting patient's/clients' health status to the treatment team within protocol and scope of practice.
4. Evaluate patient/client needs, strengths and problems in order to determine if treatment goals are being met.
5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Hospitality & Tourism

Lodging

Use various communication technologies to accomplish work tasks in lodging facilities.

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2. Explain the role and importance of housekeeping operations to lodging facility.
3. Allocate staff positions to meet the needs of various lodging departments.
4. Describe the role and responsibilities of lodging managers.
5. Compare the advantages and disadvantages of independently owned and chain-affiliated lodging facilities.
6. Analyze the departmental interrelationships of a lodging facility.
7. Explain various check-in and check-out procedures used in the lodging industry.
8. Understand reservation procedures used in the lodging industry.
9. Explain how room access policies and procedures ensure guest safety and minimize risks to the lodging facility.
10. Explain how cash control procedures are used in the lodging industry.
11. Explain how guests and property are protected to minimize losses or liabilities in the lodging facility.
12. Explain the basic legal issues in lodging management.
13. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Recreation, Amusements & Attractions

1. Describe career opportunities in the Recreation, Amusements & Attractions Career Pathway.
2. Explain admission and traffic control procedures used to manage and control individuals, groups and vehicles in recreation, amusement and attraction venues.
3. Determine the maintenance and technology needs for various recreation, amusement and attraction venues.
4. Describe safety and security issues unique to the Recreation, Amusements & Attractions Career Pathway.
5. Compile a resource base to manage emergency situations in recreation, amusement and attraction venues.
6. Identify safety and security issues for recreation, amusement and attraction venues that might require customer education.
7. Compare different ticket sales options to maximize revenue for recreation, amusement and attraction venues.
8. Describe the types of information and directions a guest would need at a recreation, amusement and attraction entry point.
9. Develop marketing strategies for recreation, amusement and attractions venues.
10. Analyze the merchandising, program and product potential for different recreation, amusement and attraction venues.
11. Compare and contrast various types of recreation, amusement and attraction venues.

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12. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Restaurants & Food/Beverage Services

1. Describe ethical and legal responsibilities in food and beverage service facilities.
2. Demonstrate safety and sanitation procedures in food and beverage service facilities.
3. Use information from cultural and geographical studies to guide customer service decisions in food and beverage service facilities.
4. Demonstrate leadership qualities and collaboration with others.
5. Research costs, pricing, market demands and marketing strategies to manage profitability in food and beverage service facilities.
6. Explain the benefits of the use of computerized systems to manage food service operations and guest service.
7. Utilize technical resources for food services and beverage operations to update or enhance present practice.
8. Implement standard operating procedures related to food and beverage production and guest service.
9. Describe career opportunities and qualifications in the restaurant and food service industry.
10. Apply listening, reading, writing and speaking skills to enhance operations and customer service in food and beverage service facilities.
11. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Travel & Tourism

1. Apply information about time zones, seasons and domestic and international maps to create or enhance travel.
2. Apply unit and time conversion skills to develop travel schedules and compute cost, distance and time (including travel time) factors.
3. Analyze cultural diversity factors to enhance travel planning.
4. Assess the potential (real and perceived) hazards related to multiple environments, and recommend appropriate safety, health and security measures for travelers.
5. Develop a safety and security plan containing proactive and reactive solutions to manage emergency situations for travelers and staff.
6. Use common travel and tourism terminology used to communicate within the industry.

   Customize travel with diverse transportation, lodging, cruise and food options.

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8. Compare and contrast services and products from related industries to understand and evaluate how they impact the delivery of travel and tourism products and services to customers.
9. Identify the community elements necessary to maintain cooperative tourism development efforts.
10. Develop a travel product that matches customer needs, wants and expectations.
11. Design promotional packages to effectively market travel and tourism.
12. Select the most effective communication technique and media venue to convey travel marketing information to a target audience.
13. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Human Services

Consumer Services

1. Summarize necessary credentials, licensures or state-specific requirements to prepare for a career in consumer services.
2. Communicate product or equipment features that meet the needs of clients and consumers.
3. Make consumer services recommendations meeting the needs of clients or customers.
4. Analyze financial/economic situations when making recommendations about consumer services.
5. Use standard business processes or procedures to create consumer service information and facilitate client interactions.
6. Use a variety of methods to educate audiences about consumer services.
7. Demonstrate knowledge of ethical and legal responsibilities associated with providing consumer services.
8. Apply business procedures and utilize equipment and facilities to produce satisfying client outcomes.
9. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Counseling & Mental Health Services

1. Use clear written, spoken and nonverbal messages when communicating with clients about mental health services and the counseling process.
2. Utilize functional and specialized assessments to evaluate needs and solutions for counseling and mental health.
3. Evaluate client motivation, strengths and weaknesses to develop a client treatment program.

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4. Demonstrate knowledge of an operational mental health or counseling program that meets organizational goals.
5. Demonstrate the ethical and legal responsibilities of counseling and mental health services.
6. Choose appropriate counseling and therapy techniques to serve identified needs.
7. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Early Childhood Development & Services

1. Demonstrate communication techniques with children to facilitate ongoing development and enhance learning.
2. Communicate effectively with fellow staff members to facilitate child development activities.
3. Maintain working knowledge of child development licensing and certification organizations to keep abreast of current procedures and changes.
4. Create and maintain relationships between staff and parents/family members to encourage involvement and facilitate child development and learning.
5. Evaluate safety and sanitation procedures associated with the early childhood education environment to assure compliance and prevent potential hazards.
6. Adhere to ethical and legal responsibilities, laws and regulations to protect children and families.
7. Apply principles of child growth and development, including social, emotional, physical and cognitive milestones, to provide comprehensive program offerings.
8. Evaluate curriculum for inclusiveness of children with special needs.
9. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Family & Community Services

1. Use formal and informal assessment practices to create and evaluate a prevention and/or treatment plan.
2. Identify community resources to provide family and community services.
3. Communicate effectively to gain support from the client's family and other support groups.
4. Comply with laws and procedures that govern abuse, neglect, confidentiality and other health and safety situations.
5. Evaluate crisis prevention, intervention and resolution techniques to formulate emergency plans.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Personal Care Services

1. Analyze basic principles of biology, chemistry and human anatomy for safe and effective utilization and selection of personal care products and services.
2. Evaluate an individualized personal care plan that reflects client preferences, needs and interests for a course of treatment/action.
3. Utilize data and information to maintain electronic records of client services and make recommendations for personal care services.
4. Demonstrate policies and procedures to achieve a safe and healthy environment for personal care services.
5. Develop organizational policies, procedures and regulations that establish personal care organization priorities, accomplish the mission, and provide high-quality service to a diverse set of clients and families.
6. Identify personal care business opportunities enhanced by community involvement, self-improvement and current trends.
7. Apply methods of obtaining feedback to understand expectations and promote high-quality personal care services standards.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Information Technology

Information Support & Services

1. Provide technology support to maintain service.
2. Manage operating systems and software applications, including maintenance of upgrades, patches and service packs.
3. Apply appropriate troubleshooting techniques in resolving computer hardware, software and configuration problems.
4. Perform installation, configuration and maintenance of operating systems.

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5. Demonstrate the use of networking concepts to develop a network.
6. Evaluate the effectiveness of an information system.
7. Employ system installation and maintenance skills to setup and maintain an information system.
8. Employ system administration and control skills to monitor the performance of an information system.
9. Employ technical writing and documentation skills in support of an information system.
10. Apply quality assurance processes to maximize information system operation.
11. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Network Systems

1. Analyze customer or organizational network system needs and requirements.
2. Analyze wired and wireless network systems to determine if they meet specifications (e.g., IEEE, power, security).
3. Design a network system using technologies, tools and standards.
4. Perform network system installation and configuration.
5. Perform network administration, monitoring and support to maintain a network system.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Programming & Software Development

1. Analyze customer software needs and requirements.
2. Demonstrate the use of industry standard strategies and project planning to meet customer specifications.
3. Analyze system and software requirements to ensure maximum operating efficiency.
4. Demonstrate the effective use of software development tools to develop software applications.
5. Apply an appropriate software development process to design a software application.
6. Program a computer application using the appropriate programming language.
7. Demonstrate software testing procedures to ensure quality products.
8. Perform quality assurance tasks as part of the software development cycle.
9. Perform software maintenance and customer support functions.
10. Design, create and maintain a database.

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11. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Web and Digital Communications

1. Analyze customer requirements to design and develop a Web or digital communication product.
2. Apply the design and development process to produce user-focused Web and digital communications solutions.
3. Write product specifications that define the scope of work aligned to customer requirements.
4. Demonstrate the effective use of tools for digital communication production, development and project management.
5. Develop, administer and maintain Web applications.
6. Design, create and publish a digital communication product based on customer needs.
7. Evaluate the functionality of a digital communication product using industry accepted techniques and metrics.
8. Implement quality assurance processes to deliver quality digital communication products and services.
9. Perform maintenance and customer support functions for digital communication products.
10. Comply with intellectual property laws, copyright laws and ethical practices when creating Web/digital communications.
11. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Law, Public Safety, Corrections & Security

Correction Services Career Pathway

1. Assess and implement measures to maintain safe and healthful working conditions in a corrections environment.
2. Analyze and summarize the legal responsibilities associated with different roles within corrections organizations in order to demonstrate a commitment to professional, ethical behavior.
3. Analyze and synthesize information related to the various laws, ordinances, regulations and organizational rules that apply to careers in corrections in order to demonstrate an understanding of expectations for employees in the field.
4. Analyze hostile situations and execute anger/conflict management strategies in order to take charge of problems that arise in correctional settings.

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Observe and evaluate the surrounding environment for signs of potential problems and/or danger in order to proactively address potential issues before they occur in correctional settings.

6. Analyze, interpret and execute standard operational procedures used in the criminal justice system in order to maintain security in a correctional environment.
7. Summarize and apply knowledge of technical skill procedures typical of correctional staff.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Emergency and Firefighting Management Services

1. Compare and contrast relevant aspects of different career fields available for professionals in fire and emergency management,
2. Execute protocols for handling emergency situations that range from minor medical and fire emergencies to area-wide incidents to demonstrate the application and enhancement of key skills used to respond effectively in such instances.
3. Execute operational and repair requirements when using equipment in order to maintain functional equipment ready for use in fire and medical emergency situations.
4. Examine equipment and summarize the various applications for equipment commonly used in emergency and fire management services.
5. Design and implement an appropriate Incident Command System to assure the effective management of logistical procedures at an incident scene.
6. Recognize materials as hazardous using common codes and icons used in the fire and emergency management environment.
7. Analyze and summarize hazardous materials transportation modes in order to assure the safe transport of substances from fire and emergency scenes.
8. Implement public relations plans involving key community audiences and the local fire and emergency management facilities in order to enhance public awareness and safety in fire and emergency situations.
9. Examine and summarize the various elements and issues involved in using Preparedness and Response Systems during disaster situations in order to demonstrate understanding of the systems available for managing large scale disasters.
10. Examine and summarize the key functions and techniques of critical infrastructure protection to assure protection of potential targets for terrorism and/or natural disasters.
11. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Security and Protective Services

1. Examine crime prevention concepts to understand how they can be applied and how they relate to security and protective services functions.

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2. Explain how "risk management" principles can apply to security functions for the protection of assets in various settings.
3. Describe the importance of good public relations techniques as they relate to security and crisis situations.
4. Demonstrate a basic understanding of security systems and their role in an overall security strategy.
5. Demonstrate an understanding of terrorism as it relates to the duties of a security officer and a security specialist for the protection of persons, property and information.
6. Examine, summarize and execute the procedures for basic incident responses in order to demonstrate an understanding of the security officer's role and responsibility in handling various types of incidents.
7. Demonstrate proficiency in the performance of selected tasks related to the roles and responsibilities of a security officer.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Law Enforcement Services

1. Demonstrate knowledge of appropriate techniques for managing crisis situations in order to maintain public safety.
2. Demonstrate knowledge of protocols and procedures designed for handling and managing domestic violence, motor vehicle traffic stops, explosive and hazardous materials incidents, crime scenes, and evidence collection.
3. Describe and perform protocols and procedures designed to safely transport a person in custody.
4. Understand and demonstrate techniques and protocols for effectively and safely responding to crimes in progress in order to ensure individual and public safety.
5. Execute protocols and procedures involved with juvenile victims and offenders in order to protect their rights.
6. Investigate and document a motor vehicle accident in compliance with prescribed procedures.
7. Evaluate situations that require the use of force and demonstrate the appropriate level of force necessary.
8. Demonstrate the ability to recognize the signs and symptoms of possible child abuse and neglect.
9. Examine and summarize the various law enforcement issues involved in Preparedness and Response Systems for disaster and potential terrorist situations.
10. Demonstrate knowledge of Victims Rights and procedures for protecting them.
11. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

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Legal Services

1. Execute techniques for effective listening in order to manage receipt of orally communicated information delivered in a legal services environment.
2. Write accomplished materials to demonstrate specific academic writing skills desired from professionals in the legal services environment.
3. Model skills associated with the effective application of information technology tools used to perform daily tasks assigned to legal services professionals.
4. Execute the use of legal terminology in order to effectively communicate within the legal services community of practice.
5. Model the technical knowledge and skills required of legal services professionals in order to pursue the full range of careers in the legal services pathway.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Manufacturing

Health, Safety, & Environmental Assurance

1. Demonstrate the safe use of manufacturing equipment.
2. Develop safety plans for production processes that meet health, safety and environmental standards.
3. Demonstrate a safety inspection process to assure a healthy and safe manufacturing environment.
4. Evaluate a system of health, safety and/or environmental programs, projects, policies or procedures to determine compliance.
5. Evaluate continuous improvement protocols and techniques in health, safety and/or environmental practices.
6. Conduct job safety and health analysis for manufacturing jobs, equipment and processes.
7. Develop the components of a training program based on environmental health and safety regulations.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Logistics & Inventory Control

1. Demonstrate positive customer service skills in regard to logistics and inventory control issues.
2. Demonstrate proper handling of products and materials in a manufacturing facility.
3. Develop a safety inspection process to assure a healthy and safe manufacturing facility.

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Manage inventory using logistics and control processes and procedures.

5. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Maintenance, Installation, & Repair

1. Demonstrate maintenance skills and proficient operation of equipment to maximize manufacturing performance.
2. Demonstrate the safe use of manufacturing equipment to ensure a safe and healthy environment.
3. Diagnose equipment problems and effectively repair manufacturing equipment.
4. Investigate and employ techniques to maximize manufacturing equipment performance.
5. Implement a preventative maintenance schedule to maintain manufacturing equipment, tools and workstations.
6. Implement an effective, predictive and preventive manufacturing equipment maintenance program.
7. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Manufacturing Production Process Development

1. Produce quality products that meet manufacturing standards and exceed customer satisfaction.
2. Research, design and implement alternative manufacturing processes to manage production of new and/or improved products.
3. Monitor, promote and maintain a safe and productive workplace using techniques and solutions that ensure safe production of products.
4. Implement continuous improvement processes in order to maintain quality within manufacturing production.
5. Develop procedures to create products that meet customer needs.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Production

1. Diagnose production process problems and take corrective action to meet production quality standards.
2. Manage safe and healthy production working conditions and environmental risks.
3. Make continuous improvement recommendations based on results of production process audits and inspections.

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Coordinate work teams when producing products to enhance production process and performance.

5. Demonstrate the safe use of manufacturing equipment.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Quality Assurance

1. Evaluate production operations for product and process quality.
2. Recommend and implement continuous improvement in manufacturing processes.
3. Coordinate work teams to create a product that meets quality assurance standards.
4. Employ project management processes using data and tools to deliver quality, value-added products.
5. Perform safety inspections and training to ensure a safe and healthy workplace.
6. Implement continuous improvement processes to maintain quality products.
7. Identify inspection processes that ensure products meet quality specifications.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Marketing

Marketing Communications

1. Apply techniques and strategies to convey ideas and information through marketing communications.
2. Plan, manage and monitor day-to-day activities of marketing communications operations.
3. Access, evaluate and disseminate information to enhance marketing decision-making processes.
4. Obtain, develop, maintain and improve a marketing communications product or service mix to respond to market opportunities.
5. Communicate information about products, services, images and/or ideas to achieve a desired outcome.
6. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Marketing Management

1. Plan, organize and lead marketing staff to achieve business goals.
2. Plan, manage and monitor day-to-day marketing management operations.
3. Plan, manage and organize to meet the requirements of the marketing plan.
4. Access, evaluate and disseminate information to aid in making marketing management decisions.

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5. Determine and adjust prices to maximize return and meet customers' perceptions of value.
6. Obtain, develop, maintain and improve a product or service mix in response to market opportunities.
7. Communicate information about products, services, images and/or ideas.
8. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Marketing Research

1. Plan, organize and manage day-to-day marketing research activities.
2. Design and conduct research activities to facilitate marketing business decisions.
3. Use information systems and tools to make marketing research decisions.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Merchandising

1. Plan, organize and lead merchandising staff to enhance selling and merchandising skills.
2. Plan, manage and monitor day-to-day merchandising activities.
3. Move, store, locate and/or transfer ownership of retail goods and services.
4. Access, evaluate and disseminate marketing information to facilitate merchandising decisions and activities.
5. Determine and adjust prices to maximize return and meet customers' perceptions of value.
6. Obtain, develop, maintain and improve a product or service mix to respond to market opportunities.
7. Communicate information about retail products, services, images and/or ideas.
8. Create and manage merchandising activities that provide for client needs and wants.
9. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Professional Sales

1. Access, evaluate and disseminate sales information
2. Apply sales techniques to meet client needs and wants.
3. Plan, organize and lead sales staff to enhance sales goals.

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4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Science, Technology, Engineering & Mathematics

Engineering & Technology

1. Use STEM concepts and processes to solve problems involving design and/or production.
2. Display and communicate STEM information.
3. Apply processes and concepts for the use of technological tools in STEM.
4. Apply the elements of the design process.
5. Apply the knowledge learned in STEM to solve problems.
6. Apply the knowledge learned in the study of STEM to provide solutions to human and societal problems in an ethical and legal manner.
7. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Science & Mathematics

1. Apply science and mathematics to provide results, answers and algorithms for engineering and technological activities. Apply science and mathematics concepts to the development of plans, processes and projects that address real world problems.
2. Analyze the impact that science and mathematics has on society.
3. Apply critical thinking skills to review information, explain statistical analysis, and to translate, interpret and summarize research and statistical data.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Transportation, Distribution & Logistics

Facility & Mobile Equipment Maintenance

1. Develop preventative maintenance plans and systems to keep facility and mobile equipment inventory in operation.
2. Design ways to improve facility and equipment system performance.

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Health, Safety, & Environmental Management

1. Describe the health, safety and environmental rules and regulations in transportation, distribution and logistics workplaces.
2. Develop solutions to improve performance of health, safety and environmental management services.
3. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Logistics Planning & Management Services

1. Develop solutions to provide and manage logistics services for the company and customers.
2. Analyze and improve performance of logistics systems to provide logistics planning and management services.
3. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Sales & Service

1. Analyze the ongoing performance of transportation, logistics and distribution-related sales and service operations.
2. Demonstrate the use of sales and ongoing service of products and services that are transportation related to promote the development of existing and future clients and customers.
3. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Transportation Operations

1. Develop and evaluate transportation plans to move people and/or goods to meet customer requirements.
2. Analyze performance of transportation operations in order to improve quality and service levels and increase efficiency.
3. Comply with policies, laws and regulations in order to maintain safety, security and health and mitigate the economic and environmental risk of transportation operations.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Transportation Systems / Infrastructure Planning, Management & Regulation

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1. Develop plans to maintain and/or improve the transportation infrastructure.
2. Assess, plan and manage the implementation of transportation services.

3. Describe ways to improve the system utilization, flow, safety and environmental performance of transportation systems.
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

Warehousing & Distribution Center Operations

1. Demonstrate efficient and effective warehouse and distribution center operations.
2. Describe ways to improve the performance of warehouse and distribution operations.
3. Analyze compliance with company policies and government laws and regulations in warehouse and distribution operations
4. Participate in a co-curricular career technical student organization that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.