



Regional Occupational Program

Fire Technology A-G 2026-2027

COURSE DESCRIPTION

Fire Technology is a public service course that introduces students to eligibility, training standards, and career pathways in fire and emergency services, including firefighting, fire investigation, rescue, and emergency medical services. Students study foundational concepts in fire behavior and fire science, including combustion, hazardous materials awareness, fuels, and extinguishing agents. Students also gain introductory hands-on experience with fire apparatus, tools, and equipment, including hoses and nozzles, ladders, pumps, and personal protective equipment (PPE). Students participate in training activities related to first aid, CPR, rescue practices, communication, critical thinking, teamwork, and other employability skills needed for success in school, postsecondary training, and public service careers.

This course provides students with foundational knowledge and skills that support future fire technology, emergency response, and public service coursework. It may prepare students for postsecondary opportunities that lead to certifications such as Emergency Medical Technician (EMT), Fire Fighter 1, fire academy completion, an associate degree in Fire Science or Fire Technology, or a Bachelor of Science in Fire Administration or Fire Science. This course does not directly award a fire service certification.

Course Information

Course Length: 1 Year
 Prerequisite: None
 Course Level: Capstone
 UC: Yes G - Elective
 Articulated: Yes
 Industry Cert.: CPR/First Aid/AED
 Industry Sector: Public Services
 Pathway: Emergency Response
 CALPADS: 8422

O*Net SOC Codes

33-2011 Firefighters
 33-2021 Fire Inspectors and Investigators
 33-2022 Forest Fire Inspectors and Prevention Specialists

Legend

CTE - PS CTE Pathway Standards
 CRP Career Ready Practices
 CTE - AS CTE Anchor Standards
 CCSS Common Core State Standards
 ISTE International Society for Technology in Education

*Includes updates from 25/26 Public Services Advisory
[Advisory Minutes](#)*

Fire Technology

Course Orientation

- a. Discuss objectives for this course, including competencies, teacher expectations, classroom policies, and procedures.
- b. Identify and discuss the acquisition of transferable skills (communication, collaboration, creativity, and critical thinking) and their importance to being college and career ready and for future personal and professional success.
- c. Review objectives, competencies, and course syllabus.
- d. Discuss student and teacher expectations, including behavior, class rules, appropriate dress, pre-course knowledge, and grading policies, including enrollment and attendance requirements and procedures, and classroom/school safety and disaster procedures.
- e. Discuss next steps in course sequence related to the career pathway, the need for reinforcement of basic skills, transferable skills, and postsecondary and career options.
- f. Discuss the Big Six: Career Ready Essentials and the Standards for Career Ready Practice as they relate to this course, all aspects of the industry sector, and being college and career ready.

Big Six: Career Ready Essentials

1. Effective Communication	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ol style="list-style-type: none"> a. Demonstrate effective verbal communication and conflict resolution skills. b. Use the writing process to develop written communication with the appropriate tone, organization, and format for the identified audience. c. Explain the effect of interpersonal skills on one's ability to communicate effectively and develop relationships. d. Describe the impact of ineffective communication on business relationships. e. Analyze the impact of vocabulary, body language, and tone on verbal communication. f. Demonstrate active listening skills. g. Accurately interpret industry-specific written communication. h. Model responsible and effective use of various communication technologies. i. Identify valid and reliable digital reference and resource materials. j. Gather information from multiple digital sources to compare and contrast, synthesize, and summarize. k. Identify and use appropriate communication and collaboration technologies. l. Utilize technology to problem solve, accomplish tasks, and to produce or publish products. 		<u>1</u> <u>2</u> <u>11</u>	<u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>SLS</u> <u>11-12.2</u> <u>9-10</u> <u>11-12.1</u> <u>11-12.1d</u> <u>WS</u> <u>11-12.7</u> <u>11-12.6</u>	<u>1b,c</u> <u>2c</u> <u>3b,c</u> <u>5c</u> <u>6b,c,d</u>
2. Collaboration, Creativity, and Critical Thinking	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ol style="list-style-type: none"> a. Demonstrate critical thinking skills for a variety of purposes and in different settings. b. Collaborate to reach consensus on an identical objective through the sharing of knowledge, tasks, and learning. c. Discuss the importance of the critical thinking process to real-world applications. 		<u>2</u> <u>4</u> <u>5</u> <u>7</u> <u>9</u>	<u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>7</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>SLS</u>	<u>1c</u> <u>3c,d</u> <u>4a-d</u> <u>5c,d</u> <u>6c</u>

<ul style="list-style-type: none"> d. Evaluate the impact of creative thinking on problem solving and innovation in real-world applications. e. Compile work that demonstrates the process used to (elaborate, refine, analyze) evaluate original ideas and maximize creative efforts. f. Apply divergent and convergent thinking to the development of an original idea or solution. g. Examine real-world limits to adopting ideas. h. Demonstrate creative thinking (preparation, insight, evaluation, elaboration, and communication) to create a new idea or concept. i. Assume shared responsibility for collaborative work, and value the individual contributions made by each team member. j. Evaluate evidence, arguments, claims, and beliefs to identify connections. k. Identify bias, prejudice, propaganda, self-deception, distortion, and misinformation. l. Produce intellectual, informational, or material products that serve an authentic purpose. m. Work effectively and respectfully with those from diverse backgrounds or cultures. n. Demonstrate respect, trust, commitment, and the ability to compromise in collaborative projects. 		<u>10</u> <u>11</u>	<u>8</u> <u>9</u> <u>11</u>	<u>9-10</u> <u>11-12.1</u> <u>11-12.1d</u> <u>11-12.2</u> <u>WS</u> <u>11-12.7</u> <u>11-12.6</u>	<u>7b,c,d</u>
3. Leaders and Teams: Roles and Responsibilities	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Determine the individual and team members' roles and responsibilities. b. Demonstrate leadership skills and qualities (i.e., reliability, negotiation skills, initiative, positive reinforcement, recognition of others' efforts, problem-solving skills, conflict resolution, and delegation). c. Explain the importance of technical, social, and communication skills to team success. d. Compare and contrast leadership styles and their effectiveness in various situations. e. Organize and delegate responsibilities in a team setting to encourage ideas, perspectives, and contributions from all team members. f. Develop a strong sense of team identity by brainstorming solutions, volunteering, assisting others, practicing respect and courtesy, and taking initiative. g. Examine situations in which a follower becomes the leader. h. Describe twenty-first-century skills required across all occupations. i. Identify and discuss the characteristics of a successful team (i.e., leadership, cooperation, and effective decision-making). j. Leverage social and cultural differences to increase innovation and quality of work. 		<u>7</u> <u>8</u> <u>9</u>	<u>3</u> <u>7</u> <u>8</u> <u>9</u> <u>11</u>	<u>SLS</u> <u>11-12.2</u> <u>9-10</u> <u>11-12.1</u> <u>11-12.1d</u> <u>WS</u> <u>11-12.6</u>	<u>7a,c</u>
4. Legal, Ethical, and Environmental Considerations	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate industry-specific ethical and legal practices. b. Identify eco-friendly industry-specific practices and resources. c. Identify local, state, and federal regulatory agencies, entities, laws, and regulations. 		<u>5</u> <u>7</u> <u>8</u>	<u>3</u> <u>5</u> <u>7</u>	<u>WS</u> <u>11-12.6</u> <u>11-12.7</u>	<u>2a,b</u> <u>3a,b</u> <u>5c</u>

<ul style="list-style-type: none"> d. Identify discrimination based on race, nationality, religion, gender, age, disability, or sexual orientation. e. Summarize the ethical and legal implications of workplace discrimination and harassment. f. Explain the concept of corporate citizenship. g. Examine an employer's role in protecting the health and welfare of employees, the community, and the environment. h. Analyze current environmental laws and regulations and their impact on industry. i. Compare and contrast both society's and industry's impact on the environment. 		<u>12</u>	<u>8</u> <u>9</u> <u>11</u>	<u>SLS</u> <u>9-10</u> <u>11-12.1</u> <u>11-12.1d</u> <u>11-12.2</u>	<u>6c</u>
5. Personal Growth and Career Planning	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate continued personal development and growth. b. Develop and manage a personal growth and career plan. c. Explain the relationship between sound financial habits and financial security. d. Create and manage a personal financial plan. e. Demonstrate initiative in achieving personal and professional goals. f. Apply time management strategies to meet deadlines. g. Demonstrate a growth mindset through flexibility and a positive attitude. h. Select and demonstrate appropriate job-search and retention techniques. i. Demonstrate strategies to prepare for employment. j. Demonstrate interpersonal skills appropriate for the workplace. k. Elaborate on the importance of perseverance to personal and professional success. l. Discover personal career interests, aptitudes, and skills. 		<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>6</u>	<u>2</u> <u>3</u> <u>4</u> <u>7</u> <u>8</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>SLS</u> <u>9-10</u> <u>11-12.1</u> <u>11-12.1d</u> <u>11-12.2</u> <u>WS</u> <u>11-12.6</u>	<u>1a</u> <u>3a,c</u> <u>4d</u> <u>6a,d</u> <u>7b</u>
6. Workplace Safety and Personal Wellness	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate proper industry-specific safe work practices to prevent injury or illness. b. Assess the potential impact of goal setting on personal and professional success. c. Describe the role of security and emergency procedures in workplace safety. d. Describe the effect of preventative measures on emergencies in the workplace. e. Identify and describe the causes, prevention, and treatment of common accidents. f. Identify local, state, and federal agencies that regulate workplace safety. g. Explain the role of the California Occupational Safety and Health Administration (Cal-OSHA) and the Environmental Protection Agency (EPA). h. Discuss the basics of system operations. i. Demonstrate the proper use of personal protective equipment (PPE). j. Explain the purpose of and accurately interpret a Safety Data Sheet (SDS). k. Identify hazardous materials and chemicals. l. Demonstrate proper procedures to respond to work-related accidents and injuries. m. Describe how ergonomics, housekeeping, and maintenance are related to accidents and injuries. 		<u>2</u> <u>5</u> <u>6</u> <u>8</u> <u>12</u>	<u>2</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>10</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u> <u>11-12.6</u> <u>SLS</u> <u>9-10</u> <u>11-12.1</u> <u>11-12.1d</u>	<u>1a,d</u> <u>2a,d</u> <u>5b</u>

<p>n. Demonstrate cyber ethics, cyber safety, and cybersecurity.</p> <p>o. Assess the potential impact of preventative physical and mental health measures on workplace safety.</p>					
Fire Technology Units of Instruction					
7. Physical Fitness and Agility	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of the level of nutrition, fitness, strength, agility, and psychological health and well-being required for safely working in emergency response career fields.</p> <p>b. Describe the physical strength, endurance, agility, and job-related ability expectations commonly associated with entry into emergency response employment.</p> <p>c. Discuss the importance of proper nutrition and physical fitness in performing the duties of emergency response personnel.</p>	<p>B5.0 B5.1 B5.2</p>	<p><u>1</u> <u>2</u> <u>5</u> <u>6</u></p>	<p><u>1</u> <u>2</u> <u>5</u> <u>6</u> <u>11</u></p>	<p>LS 9-10 11-12.6</p> <p>WS 11-12.7</p> <p>RSTS 9-10 11-12.7</p>	
8. Fire Technology Terminology	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of the basic concepts, principles, and terminology of fire technology.</p> <p>b. Compare and contrast a fire triangle and a fire tetrahedron.</p> <p>c. Describe the classification of fires, the fire triangle and fire tetrahedron, and fire behavior.</p> <p>d. Use appropriate terminology on clear, concise, and legible report entries when preparing and submitting required reports.</p> <p>e. Practice verbal, nonverbal, and written emergency communication techniques used when interacting with emergency response personnel in a variety of emergency situations.</p>	<p>B2.3 B3.7 B3.9 B8.3</p>	<p><u>1</u> <u>2</u> <u>5</u></p>	<p><u>1</u> <u>2</u> <u>5</u> <u>11</u></p>	<p>LS 9-10 11-12.6</p> <p>WS 11-12.7</p>	
9. Demonstration and Tour	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of fire apparatus, tools, and equipment and their function.</p> <p>b. Describe the layout and design of a typical fire station.</p> <p>c. Identify and describe the types of tools and equipment housed in a fire station.</p> <p>d. Identify tools and equipment carried on fire apparatus.</p> <p>e. Identify and describe the function of personal protective equipment (PPE) used by firefighters.</p>	<p>B4.2 B8.4 B9.11</p>	<p><u>1</u> <u>2</u> <u>5</u></p>	<p><u>1</u> <u>2</u> <u>5</u> <u>11</u></p>	<p>LS 9-10 11-12.6</p> <p>WS 11-12.7</p>	
10. Tools and Equipment	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate the proper use of common tools and equipment used in firefighting.</p>	<p>B3.8 B4.1</p>	<p><u>1</u> <u>2</u></p>	<p><u>1</u> <u>2</u></p>	<p>LS 9-10</p>	

<ul style="list-style-type: none"> b. Discuss the safe and proper use of hand tools, including scraping, cutting, striking, and forcible entry tools. c. Demonstrate the proper maintenance and care of the tools carried on a fire apparatus. d. Identify the purpose and function of all hose appliances. e. Identify the various tools and equipment carried on various fire apparatus. f. Identify some innovative emergency apparatus safety features that help improve scene safety and protect emergency responders. 	B4.3 B8.4 B9.6	<u>5</u>	<u>5</u> <u>11</u>	11-12.6 WS 11-12.7	
11. Hoses: Uses and Care	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the use and proper care of fire hoses and nozzles. b. Identify various types and sizes of fire hose and its construction. Identify proper hose loads, uses, and advantages of each. c. Determine the proper size for an attack line and a backup line based on the size of the fire incident and method of suppression used. d. Demonstrate methods for coupling and uncoupling hoses and nozzles. Discuss the importance of the proper nozzle pattern for the right fire that may be encountered. e. Describe the method for calculating friction loss, elevation pressure, flow, and engine pressure for common fire stream applications. f. Describe and demonstrate the use of hose bridges and ramps. g. Demonstrate various fire hose rolls using one or two people. Explain the safety measures taken when rolling, carrying, or dragging fire hose. h. Discuss the causes and methods of preventing fire hose destruction. Describe the proper care and maintenance of fire hoses. i. Identify the purpose and function of master stream appliances and special purpose nozzles and clamps. Compare and contrast fog and straight stream nozzles. 	B8.4	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	
12. Self-Contained Breathing Apparatus (SCBA) and PPE	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the appropriate use of breathing apparatus and personal protective equipment (PPE), its care, and its limitations in firefighter safety. b. Describe the functions of the human respiratory and cardiovascular systems, the effects of physical and mental stress during emergency operations, and how SCBA supports respiratory protection in hazardous atmospheres. c. Understand the four dangers to the respiratory system that may be encountered when conducting a search in a fire building. d. Compare and contrast the two types of SCBA systems. Describe the uses, functions, and limitations of the SCBA. Discuss the physical requirements for wearing a self-contained breathing apparatus. Describe the basic elements of effective air management. e. Discuss safety practices when wearing SCBA; demonstrate proper donning and doffing of SCBA while wearing protective clothing. Describe procedures and protocols for inspection, 	B4.2 B8.4 B8.7	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	

<p>cleaning, maintenance, cylinder charging, and cylinder testing in accordance with manufacturer guidelines and department policy.</p> <p>f. Describe SCBA usage, e.g., entanglement from the rear, maneuvering past an obstacle, and passing beneath low overhead clearance.</p> <p>g. Discuss emergency procedures to be used in the event of failure of a SCBA.</p> <p>h. Discuss the types of personal protective clothing; identify the different articles of structural firefighting protective equipment, their function, inspection, cleaning, and maintenance.</p> <p>i. Demonstrate the proper donning and doffing of personal protective equipment (PPE), such as helmet, hood, boots, gloves, protective coat and trousers, SCBA, personal alert safety system (PASS), and eye protection.</p>					
13. Fire Service Ropes	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of common ropes used in fire service, their components, construction, characteristics, maintenance, and storage.</p> <p>b. Identify the purpose and function of fire service knots. Demonstrate proper fire service knot tying, such as knots used to hoist equipment, secure objects, anchor safety ropes, and join ropes, in accordance with instructor direction, safety guidelines, and local protocols.</p> <p>c. Demonstrate hitches, e.g., Clove Hitch, Half Hitch, Girth Hitch, Munter Hitch, and Tensionless Hitch.</p> <p>d. Demonstrate the proper procedure for loading a drop bag.</p> <p>e. Demonstrate the proper way to safely raise or lower equipment.</p> <p>f. Describe basic rope safety concepts and introductory rappelling considerations, as appropriate to the course setting, equipment, supervision, and local safety protocols.</p>	B8.4	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	
14. Fire Service Ladders	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of various fire service ladders, including their construction, function, characteristics, inspection, and maintenance.</p> <p>b. Describe fire service ladder design, construction, function, testing, and maintenance.</p> <p>c. Describe the procedures to safely lift, position, and lower ladders.</p> <p>d. Describe the various methods for safely carrying a ladder.</p> <p>e. Discuss the proper climbing techniques in various fire service circumstances.</p> <p>f. Describe how to raise a roof ladder as a member of a team.</p> <p>g. Identify ladder tactics and safety considerations for multi-dwelling, commercial, and high-rise buildings.</p>	B8.4	<u>1</u> <u>2</u> <u>5</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	
15. Building Construction and Forcible Entry	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of various types of building construction, construction concerns, and its effect on fire behavior.</p> <p>b. Demonstrate knowledge in forcible entry techniques used by fire service personnel.</p>	B8.3 B8.4 B8.6	<u>1</u> <u>2</u> <u>5</u>	<u>1</u> <u>2</u> <u>5</u>	LS 9-10 11-12.6	

<ul style="list-style-type: none"> c. Discuss the five common types of building construction used in fire service and fire code contexts, including fire-resistive, noncombustible, ordinary, heavy timber, and wood-frame construction, and describe how building construction affects firefighter safety, fire behavior, and rapid size-up. d. Discuss the potential dangers presented by a particular type of construction and the effects a fire has on it. e. Discuss how rated building construction bears an important relationship to building size, exposure, and resistance to internal fire spread. f. Understand the behavior of a building under fire conditions. g. Describe common roof support systems and discuss the materials, construction features, and hazards associated with them. h. Describe building occupancy classifications to categorize building structures (Groups A, B, E, F, H, I, M, R, S, U) and their impact on fire code enforcement. i. Identify four classifications of forcible entry tools and describe the different methods of forcible entry using power tools. j. Identify basic considerations involved in through-the-lock entry and describe methods and locations of forcible entry into various building types, in accordance with safety practices and local protocols. 		<u>11</u>	<u>11</u>	<u>WS</u> <u>11-12.7</u>	
16. Combustion and Fire Technology	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the three methods of fire spread, how fire can extend horizontally and vertically, and the hazards associated with toxic products of combustion. b. Define combustion and describe the four basic products of combustion: heat, flame, smoke, and fire gases. c. Provide a description of a 'fuel.' Describe the properties affecting solid fuels, liquid fuels, and gas fuels. d. Identify and describe common fire gases and toxic products of combustion, such as carbon monoxide (CO), hydrogen cyanide (HCN), and carbon dioxide (CO₂), and explain their effects on humans. e. Discuss the five stages of fire development according to the International Fire Service Training Association (IFSTA). f. Describe the four sources of heat energy. Identify three methods of heat transfer according to IFSTA. g. Compare and contrast the characteristics of pyrolysis, flashover, and backdraft. h. Describe various extinguishing agents and their capabilities. 	<u>B8.3</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	
17. Ventilation	CTE - PS	CRP	CTE - AS	CCSS	ISTE

<ul style="list-style-type: none"> a. Demonstrate understanding of the basic principles of ventilation and its importance as a strategic consideration in firefighting. b. Describe how proper ventilation tactics can mitigate the hazards of a ventilation-controlled fire. c. Identify special ventilation challenges of various building structures, including high-rise buildings. d. Define mechanical ventilation. Describe the purpose and general procedures for vertical, horizontal, and cross ventilation. e. Identify toxic hazards of smoke and its effect on the human body. f. Describe smoke control and smoke management systems and how they may affect fire behavior, visibility, and ventilation decisions. g. Define and describe positive-pressure ventilation and related safety considerations. 		<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	
18. Fire Station Practices	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of fire stream patterns, pressure calculations, various types of hose loads, and conditions appropriate for each type of stream setting. b. Describe how to identify the proper nozzle pattern for different fire conditions, including Class A fires. c. Describe various foam agents and their common applications for Class B fires. d. Discuss techniques for advancing fire streams. e. Identify and describe various types of pressure, e.g., atmospheric, negative, static, residual, and normal operating. f. Describe the process and correctly calculate friction loss and elevation pressure for fire stream applications. g. Discuss the safety precautions when handling a charged line. Demonstrate how to operate and advance a charged line. h. Identify safety precautions involved with energized electrical equipment. 		<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	
19. Cardiopulmonary Resuscitation (CPR)	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of rescue breathing and CPR techniques for adults, children, and infants. b. Describe the anatomy and function of the circulatory system for adults, children, and infants. c. Identify common causes of cardiac arrest and explain the links in the cardiac chain of survival. d. Describe the components of CPR, demonstrate CPR, and explain when to start and stop CPR. e. Demonstrate the steps of one-rescuer and two-rescuer adult CPR. Discuss the difference in performing CPR on infants and children. f. Explain possible complications, consent considerations, and legal protections or implications related to performing CPR. 	<u>B4.6</u>	<u>1</u> <u>2</u> <u>5</u> <u>6</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>6</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u> <u>RSTS</u> <u>9-10</u> <u>11-12.7</u>	

<p>g. Describe the process and discuss the benefit of using an Automated External Defibrillator (AED).</p> <p>h. Describe rescue breathing techniques using appropriate barrier devices and describe equipment used for oxygen administration, including related safety considerations and hazards.</p>					
<p>20. First Aid</p>	<p>CTE - PS</p>	<p>CRP</p>	<p>CTE - AS</p>	<p>CCSS</p>	<p>ISTE</p>
<p>a. Demonstrate knowledge of assessment skills to recognize and care for patients suffering from shock, bleeding, and soft tissue injuries.</p> <p>b. Describe the function and relationship between the parts of the circulatory system, e.g., heart, blood vessels, and veins. Differentiate between arterial, venous, and capillary bleeding. Explain emergency care for external bleeding.</p> <p>c. Describe signs, symptoms, possible complications, and first aid care for patients with thermal, chemical, respiratory, and electrical burns.</p> <p>d. Discuss first aid care for patients with different types of wounds and injuries, such as face and scalp injuries, eye and nose injuries, head and neck wounds, chest and back injuries, impaled objects, abdominal injuries, rib injuries, flail chest, genital injuries, extremity wounds, gunshot wounds, and bites.</p> <p>e. Explain the signs, symptoms, and treatment for shock.</p> <p>f. Define fracture, sprain, and dislocation. Describe the general principles of splinting and assessing circulation, sensation, and movement for a patient with an extremity injury.</p> <p>g. Understand and use medical terminology and related knowledge of anatomy, physiology, diseases, diagnoses, pharmacology, therapeutics, and common abbreviations necessary for emergency medical services.</p> <p>h. Explain technical skills and equipment used in emergency response occupations, such as airway, oxygen, and ventilation procedures; suction; bleeding control; shock management; cardiac arrest care; defibrillation; and wound care.</p> <p>i. Describe the function of emergency vehicles, use of medical and communication equipment, and the necessity of maintaining inventory as required for emergency services practices and procedures.</p>	<p>B4.6 B9.1 B9.2 B9.3 B9.11</p>	<p>1 2 5 6 11</p>	<p>1 2 5 6 11</p>	<p>LS 9-10 11-12.6 WS 11-12.7 RSTS 9-10 11-12.7</p>	
<p>21. Rescue Operations</p>	<p>CTE - PS</p>	<p>CRP</p>	<p>CTE - AS</p>	<p>CCSS</p>	<p>ISTE</p>
<p>a. Demonstrate knowledge of important search and rescue procedures and protocols as performed by firefighting personnel.</p> <p>b. Describe and discuss the 10 search and rescue safety considerations according to the International Fire Service Training Association (IFSTA).</p> <p>c. Describe building evacuation practices according to department policies and procedures.</p> <p>d. Describe issues involved with a rescue effort and discuss the importance of pre-planning a rescue effort.</p>	<p>B8.5 B10.2</p>	<p>1 2 5 11</p>	<p>1 2 5 11</p>	<p>LS 9-10 11-12.6 WS 11-12.7</p>	

<ul style="list-style-type: none"> e. Identify the chief danger in moving a victim before treating injuries. f. Demonstrate the various methods and techniques for handling a victim during a rescue, e.g., drags, assists, and carries. g. Identify and discuss the use of various extrication tools in rescue operations. h. Discuss how to manage an incident scene as a first responder and identify emergency response skills appropriate to the responder’s level of training and certification. i. Describe emergency protocols used during incident response, including scene safety, communication, coordination, and transfer of information to appropriate responding agencies. 					
22. Fire Prevention	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of fire prevention practices, inspections, and procedures. b. Discuss the importance of regularly scheduled fire prevention inspections of a business or facility. c. Identify and discuss tools and documentation typically used during a fire prevention inspection. d. Discuss methods of providing public education about the need for fire prevention inspections. 	B8.8	<u>1</u> <u>2</u> <u>5</u> <u>11</u> <u>12</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	
23. Records and Reports	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the basic reports and records required by fire service personnel. b. Discuss the elements and procedures of written reports. c. Discuss the importance of maintaining department records, accurate incident documentation, and record retention practices. 	B3.7	<u>1</u> <u>2</u> <u>5</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	
24. Communications	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of communication processes and procedures used to dispatch fire personnel and coordinate response to fires or other emergency situations. b. Describe various ways emergency calls and fire alarms are received and transmitted, such as 911 calls, alarm monitoring companies, automatic alarm systems, and other communication systems. c. Identify the process used to dispatch fire personnel and equipment. d. Compare and contrast different dispatch and emergency communications models used by fire agencies, including local, regional, and volunteer department settings. e. Describe the functions of expanded dispatch and emergency communications support during large or complex incidents. 	B3.3 B3.8	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	

f. Use and maintain a variety of communication equipment, understanding the importance of using current and up-to-date technology and communication equipment.					
25. Hazardous Materials	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of basic strategies to safeguard health and safety when there is potential exposure to hazardous materials.</p> <p>b. Identify basic components, potential risks, and outcomes of a hazardous materials event.</p> <p>c. Describe the need for a positive safety attitude.</p> <p>d. Describe the purpose and need to safely initiate command, establish scene management, and communicate hazards within the responder’s level of training.</p> <p>e. Discuss the use of the current Emergency Response Guidebook (ERG) to support initial isolation, protective action, hazard identification, and basic action planning during the initial phase of a hazardous materials incident.</p> <p>f. Identify and discuss the function and limitations of personal protective equipment (PPE) used for hazardous materials incidents, within the responder’s level of training and local protocols.</p>	<p>B4.23</p> <p>B4.3</p> <p>B6.3</p> <p>B7.0</p> <p>B7.3</p>	<p><u>1</u></p> <p><u>2</u></p> <p><u>5</u></p> <p><u>11</u></p> <p><u>12</u></p>	<p><u>1</u></p> <p><u>2</u></p> <p><u>5</u></p> <p><u>11</u></p>		
26. Utility Hazards	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of potential utility hazards and procedures to identify, isolate, report, and safely control these hazards in coordination with appropriate utility providers.</p> <p>b. Describe safety issues and procedures related to electrical hazards at a fire scene, including downed or energized electrical lines, electrical equipment, and fires involving electrical installations.</p> <p>c. Describe standard safety procedures for incidents involving natural gas, propane, fuel oil, or other utility-related fuel hazards.</p>	<p>B4.2</p> <p>B4.3</p> <p>B6.3</p> <p>B7.0</p> <p>B7.3</p>	<p><u>1</u></p> <p><u>2</u></p> <p><u>5</u></p>	<p><u>1</u></p> <p><u>2</u></p> <p><u>5</u></p> <p><u>11</u></p>	<p>LS</p> <p>9-10</p> <p>11-12.6</p> <p>WS</p> <p>11-12.7</p>	
27. Portable Extinguishers	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<p>a. Demonstrate knowledge of the types, classifications, and effective use of portable fire extinguishers.</p> <p>b. Identify the characteristics, limitations, and operation of various classes and types of portable fire extinguishers, including backpack extinguishers when applicable.</p> <p>c. Identify and discuss the types and uses of extinguishing agents and fire retardants used in fire suppression, as appropriate to the course setting.</p> <p>d. Discuss safety precautions when operating fire extinguishers.</p>	<p>B8.4</p>	<p><u>1</u></p> <p><u>2</u></p> <p><u>5</u></p> <p><u>11</u></p>	<p><u>1</u></p> <p><u>2</u></p> <p><u>5</u></p> <p><u>11</u></p>	<p>LS</p> <p>9-10</p> <p>11-12.6</p> <p>WS</p> <p>11-12.7</p>	
28. Fire Protection Systems and Devices	CTE - PS	CRP	CTE - AS	CCSS	ISTE

<p>a. Demonstrate knowledge of the basic operating principles of various types of fire protection systems.</p> <p>b. Identify the operating principles of heat detectors, smoke detectors, fire alarm systems, sprinkler systems, and standpipe systems, and describe their functions.</p> <p>c. Identify fire service support activities and safety measures to observe when working around fire protection systems, including sprinkler, standpipe, alarm, and detection systems.</p>	<p>B8.4</p>	<p>1 2 5</p>	<p>1 2 5 11</p>	<p>LS 9-10 11-12.6 WS 11-12.7</p>	
<p>29. Water Supplies</p>	<p>CTE - PS</p>	<p>CRP</p>	<p>CTE - AS</p>	<p>CCSS</p>	<p>ISTE</p>
<p>a. Demonstrate knowledge of water supplies, including water sources, methods of delivery, and ways to improve access to and use of those sources.</p> <p>b. Describe the components of a water supply system including water mains and hydrants.</p> <p>c. Describe auxiliary and alternative water supply sources, including considerations for rural water supply operations and community fire protection ratings.</p> <p>d. Discuss the importance of a dependable water supply.</p>	<p>B8.4</p>	<p>1 2 5</p>	<p>1 2 5 11</p>	<p>LS 9-10 11-12.6 WS 11-12.7</p>	
<p>30. Fire Pumps</p>	<p>CTE - PS</p>	<p>CRP</p>	<p>CTE - AS</p>	<p>CCSS</p>	<p>ISTE</p>
<p>a. Demonstrate knowledge of the role fire pumps play in effective firefighting, including fire pump fundamentals, requirements for fire pump acceptance, inspection, testing, and maintenance.</p> <p>b. Identify the different categories of fire pumps, e.g., centrifugal, positive displacement, in-line pump, vertical turbine and horizontal split case, and the difference in water supplies and pump capacities.</p> <p>c. Define the key components of and types of fire pumps and controllers, including engine driven and electric.</p> <p>d. Describe periodic inspection, testing, and maintenance requirements related to fire pump systems.</p> <p>e. Discuss how fire pumps are used to protect buildings, business continuance, and a company's good standing in society.</p> <p>f. Discuss NFPA 25 inspection, testing, maintenance, recordkeeping, and reporting concepts related to fire pump systems.</p>	<p>B8.4</p>	<p>1 2 5 11</p>	<p>1 2 5 11</p>	<p>LS 9-10 11-12.6 WS 11-12.7</p>	
<p>31. Wildland Fire Behavior</p>	<p>CTE - PS</p>	<p>CRP</p>	<p>CTE - AS</p>	<p>CCSS</p>	<p>ISTE</p>
<p>a. Demonstrate knowledge of basic wildland fire behavior and introductory wildland firefighting concepts.</p> <p>b. Identify environmental factors that affect the ignition, behavior, and spread of wildland fire.</p> <p>c. Describe and analyze weather, fuel, and topographic factors that affect wildland fire behavior.</p> <p>d. Identify and discuss hazardous situations pertaining to wildland fires.</p>	<p>B4.2 B10.4 B10.7</p>	<p>1 2 5 11</p>	<p>1 2 5 11</p>	<p>LS 9-10 11-12.6 WS 11-12.7</p>	

<ul style="list-style-type: none"> e. Define and discuss the fuel and weather factors that affect wildland fires. f. Identify the four topographic factors that affect Wildland fire behavior. g. Identify weather monitoring equipment and its use in relation to fire. h. Discuss the personal protective equipment (PPE) used in wildland firefighting and related safety considerations. 					
32. Fire Investigations	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the purpose of fire origin and cause investigation, including investigation roles and responsibilities and recognition of fire behavior indicators and scene observations that may support an investigation. b. Identify and discuss fire investigation factors that may be observed while responding to and upon arrival at a fire scene. c. Identify the process of documenting and preserving fire scene investigative information through the use of basic sketching and photography. d. Identify scene observations or conditions that may indicate a possible incendiary fire. e. Discuss the procedures and protocols of proper scene preservation. f. Define arson and discuss the direct and indirect impacts of intentionally set fires on the community. 		<u>1</u> <u>2</u> <u>5</u> <u>11</u> <u>12</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.7</u>	
33. Fire Department Administration	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the fire department organizational structure and chain of command. b. Define and discuss the importance of the following concepts: customer service, one department concept, and incident effectiveness. c. Discuss risk-benefit decision-making concepts used in modern fire service operations, including situations in which conditions may require defensive or no-go decisions. d. Identify current and emerging technologies and discuss how they impact modern firefighting, incident response, communication, and responder safety. e. Identify significant fire events and their resulting impact in public assembly/occupancy codes. f. Understand management skills required to lead in the contemporary fire service, whether that leadership is within a specific fire department or on a larger scale. g. Discuss the specific dimensions for dealing with the planning processes that are often inherent in the task of being a fire officer. h. Summarize laws, regulations, and organizational protocols that define the guidelines governing emergency agencies and services. i. Recognize multiagency coordination, unified command, training, resource identification and management, qualification and certification, and the collection, tracking, evaluation, and dissemination of incident information. 	<u>B1.4</u> <u>B2.1</u> <u>B2.4</u> <u>B2.5</u> <u>B3.1</u> <u>B4.0</u> <u>B8.1</u>	<u>1</u> <u>2</u> <u>4</u> <u>5</u> <u>8</u> <u>11</u> <u>12</u>	<u>1</u> <u>2</u> <u>4</u> <u>8</u> <u>11</u>	<u>LS</u> <u>9-10</u> <u>11-12.6</u> <u>WS</u> <u>11-12.6</u> <u>11-12.7</u> <u>SLS</u> <u>11-12.1d</u>	

<ul style="list-style-type: none"> j. Describe the principles, responsibilities, and relationship between the Incident Command System (ICS) and the National Incident Management System (NIMS). k. Describe the mechanisms by which emergency management stakeholder agencies and resources are coordinated for mutual aid. 					
34. Property Conservation and Overhaul	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the important concepts of property conservation and overhaul as they relate to fire service. b. Discuss the overhaul, mop-up, and post-incident safety considerations associated with wildland fire incidents. c. Define and describe property conservation and salvage procedures as they relate to fire response and fire prevention. d. Explain how and where fires occur and describe strategies for educating the public on fire prevention, preparedness, and risk reduction. 	B8.8 B10.3 B10.4	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	
35. Tactics and Strategies	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Demonstrate knowledge of the strategic and tactical procedures and protocols used in firefighting. b. Compare and contrast strategies, tactics, and tasks as they relate to contemporary fire service operations. c. Understand considerations when conducting a size-up according to department standards. d. Identify and discuss resources used to develop pre-incident plans according to department policy. e. Define and discuss general steps used to create a pre-incident planning process. f. Describe the strategic priorities at an incident. 		<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	
36. On the Job Training	CTE - PS	CRP	CTE - AS	CCSS	ISTE
<ul style="list-style-type: none"> a. Participate in supervised fire station or emergency response field experiences, as appropriate, which may include maintenance of fire station grounds, tools, and equipment; observation or approved ride-along experiences; emergency response exercises; and physical fitness and agility training. b. Perform supervised maintenance activities related to fire equipment, grounds, tools, and other assigned duties, as appropriate to the course setting and local policies. c. Participate in supervised emergency response exercises, drills, simulations, and approved events. 		<u>1</u> <u>2</u> <u>5</u> <u>11</u>	<u>1</u> <u>2</u> <u>5</u> <u>11</u>	LS 9-10 11-12.6 WS 11-12.7	

A-G Approved Key Assignments

1.	Students will be placed into groups and assigned the task of developing a training plan for the rest of the class. Examples may include team-building activities, physical training exercises, and observe-practice-repeat drills. Each group will outline its training plan and explain how the activities support physical fitness, agility, teamwork, and emergency response readiness. Each group's training plan will be evaluated by peers and the instructor using performance standards. <i>Unit(s) 7</i>
2.	Students will learn and accurately use fire technology terminology throughout the entire course. <i>Unit(s) 8</i>
3.	Students will investigate facilities in modern fire departments as well as common fire apparatus. Students will also practice using selected fire tools and appliances, as appropriate to the course setting, and describe equipment and aircraft used in firefighting and emergency response. Students will be introduced to personal protective equipment (PPE) used in the fire service and may practice wearing PPE as appropriate under instructor supervision. Students will discuss fire department types, basic command concepts, and methods of communication used in emergency response. <i>Unit(s) 9</i>
4.	Students will be shown a fire engine from the local fire department and take an inventory of the fire equipment and tools. Students will create a log, using visual and written descriptions, of all items of inventory. Students will turn in an inventory list/report, bound and formally presentable, as their final product. <i>Unit(s) 10</i>
5.	Students will hold and operate charged hose lines under high pressures and demonstrate control. Students will be responsible for using the nozzle to change fire stream volume and patterns. Students will demonstrate proper hose rolls individually and in pairs. <i>Unit(s) 11</i>
6.	Students will be introduced to self-contained breathing apparatus (SCBA). Proper donning and doffing procedures will be demonstrated, and students will practice SCBA procedures under instructor supervision according to instructor-provided performance standards, manufacturer guidance, and applicable safety protocols. <i>Unit(s) 12</i>
7.	Students will demonstrate competency in tying instructor-selected fire service knots within an assigned time frame and explain the purpose and safe use of each knot. <i>Unit(s) 13</i>
8.	As a team, students will practice ladder-related procedures as appropriate to the course setting. Working collaboratively, they will explain and apply safety standards in ladder applications. Using mathematical calculations or instructor-provided scenarios, students will analyze ladder placement, load, angle, or force considerations related to safe ladder use. <i>Unit(s) 14</i>
9.	After being presented with a scenario, each member of the squad will determine an appropriate forcible entry tool or method to use. Students will explain where and when the tool or method should be applied, analyze safety considerations, and complete any related calculations or written justification required by the instructor. <i>Unit(s) 15</i>
10.	Write a 2–3-page research paper on one of the following topics. <i>Unit(s) 16:</i> <ul style="list-style-type: none">• Three methods of fire spread• Four basic products of combustion: heat, flame, smoke, and fire gases• The properties affecting solid fuels, liquid fuels, and gas fuels.• Common fire gases and toxic products of combustion, such as carbon monoxide (CO), hydrogen cyanide (HCN), and carbon dioxide (CO₂), and their effects on humans.• Five stages of fire development according to the International Fire Service Training Association (IFSTA).• Four sources of heat energy and three methods of heat transfer according to IFSTA.• Compare and contrast the characteristics of pyrolysis, flashover, and backdraft.• Describe various extinguishing agents and their capabilities.

11.	Throughout the course, students will watch videos of various fires to practice identifying special ventilation challenges of various building structures and to select and describe proper ventilation tactics that can be used to mitigate the hazards of a ventilation-controlled fire. Students will explain why they selected the tactics. <i>Unit(s) 17</i>
12.	Demonstrate various fire stream hose patterns and create a chart to explain uses for each type of stream setting. <i>Unit(s) 18</i>
13.	Students will be tested on the components and steps of CPR for adults, children, and infants according to the current curriculum of the approved CPR/AED certifying provider. <i>Unit(s) 19</i>
14.	Students will be tested on taking vital signs and documenting the results. Students will demonstrate bleeding-control techniques using direct pressure, bandages, compression wraps, tourniquets when appropriate, and other first aid procedures taught in the course. Students will practice effective splinting techniques. <i>Unit(s) 20</i>
15.	In teams, students will participate in a mock rescue operation to demonstrate search and rescue safety considerations, planning, evacuation practices, proper victim-handling techniques, and appropriate use or identification of extrication tools. <i>Unit(s) 21</i>
16.	Students will be presented with two firefighting case studies or scenarios, one involving a commercial structure with a sprinkler system and one involving a commercial structure without a sprinkler system. Students will compare the outcomes of each scenario and analyze the effect the sprinkler system, or lack thereof, had on fire spread, life safety, and property conservation. Students will write their findings in an informative incident report or public fire awareness notice. <i>Unit(s) 22</i>
17.	Write mock-up reports and records based on assigned scenarios. <i>Unit(s) 23</i>
18.	Students will each be assigned a different role in an emergency response scenario, such as dispatch, reporting party, initial responder, incident commander, mutual aid representative, air operations, ambulance transport, receiving hospital, law enforcement, witness, or victim. Students will role-play assigned responsibilities, including communication, leadership, coordination, and protocol implementation. <i>Unit(s) 24</i>
19.	As a squad, students will respond to a simulated hazardous materials incident. Students will develop a written plan to address material identification, safety precautions, initial isolation or protective action considerations, and use mathematical computations to determine the recommended area to isolate or protect from public access. In addition, students will practice writing a report to document response actions and suggest prevention strategies. <i>Unit(s) 25</i>
20.	Students will be shown how to use the current Emergency Response Guidebook (ERG). Students will be assigned a specific hazardous material or scenario. Using the ERG, students will develop an initial public safety plan that includes hazard identification, isolation guidance, protective action considerations, and communication with appropriate responding agencies. <i>Unit(s) 26</i>
21.	Students will be shown various types of portable fire extinguishers. Students will demonstrate understanding by identifying the correct extinguisher for different classes of fire and explaining extinguisher limitations and safety considerations. If approved by the instructor and site safety procedures, students may observe or participate in a controlled extinguisher demonstration. <i>Unit(s) 27</i>
22.	Present short public service announcements on assigned fire protection systems. <i>Unit(s) 28</i>
23.	Write a 1–2-page paper on water supplies and how to improve access to and use of water sources for fire departments. <i>Unit(s) 29</i>
24.	Present to the group on different aspects of fire pumps, including key components of each type and their uses. <i>Unit(s) 30</i>
25.	Students will be presented with a wildland fire case study or scenario involving a large or complex fire incident. Students will identify key factors contributing to the incident, including weather, fuel, topography, safety concerns, and resource considerations. In an incident-report format, students will explain the problem-solving and decision-making considerations that emergency responders may use during the incident. <i>Unit(s) 31</i>
26.	Students will be presented with two fire investigation or fire protection case studies involving commercial structures, one with a sprinkler system and one without a sprinkler system. Students will compare the outcomes of each scenario and analyze how the presence or absence of a sprinkler system affected fire spread, property conservation, life safety, and fire investigation considerations. Students will write their findings in an informative incident report or public fire awareness notice. <i>Unit(s) 32</i>

27.	Students will be presented with a fire department administration case study involving public service, customer service, communication, and incident effectiveness. Students will identify key factors contributing to the scenario and analyze how fire service personnel may use communication, leadership, ethical decision-making, and problem-solving strategies to address the situation. Students will present their findings in an incident-report or case study format. <i>Unit(s) 33</i>
28.	Write a 2–3-page paper about property conservation, wildland fires, and how to educate the public on preparedness. <i>Unit(s) 34</i>
29.	In teams, students will analyze assigned incident scenarios and demonstrate or explain appropriate strategic priorities, tactical considerations, and safety protocols. <i>Unit(s) 35</i>
30.	As appropriate, students may participate in approved and supervised community-based experiences to gain hands-on exposure to the emergency response field. Students will be evaluated by the instructor and/or approved site supervisor according to course expectations and local policies. <i>Unit(s) 36</i>

Standards Alignment

The curricula have been aligned with the CTE Model Curriculum Standards released in 2013. Each industry sector was updated to meet the increased rigor and relevancy requirements of the Common Core State Standards. The curriculum also includes the new Standards for Career Ready Practices.

Standards for Career Ready Practice

1. *Apply appropriate technical skills and academic knowledge.*
2. *Communicate clearly, effectively, and with reason.*
3. *Develop an education and career plan aligned with personal goals.*
4. *Apply technology to enhance productivity.*
5. *Utilize critical thinking to make sense of problems and persevere in solving them.*
6. *Practice personal health and understand financial literacy.*
7. *Act as a responsible citizen in the workplace and the community.*
8. *Model integrity, ethical leadership, and effective management.*
9. *Work productively in teams while integrating cultural and global competence.*
10. *Demonstrate creativity and innovation.*
11. *Employ valid and reliable research strategies.*
12. *Understand the environmental, social, and economic impacts of decisions.*

CTE Anchor Standards—Common Core English Language Arts Alignment

Anchor Standard 1: Academics

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the industry sector alignment matrix for identification of standards. Note: alignment listed within each sector.

Anchor Standard 2: Communications

Language Standard: Acquire and accurately use general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the (career and college) readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. LS 9-10, 11-12.6

Anchor Standard 3: Career Planning and Management

Speaking and Listening Standard: Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. SLS 11-12.2

Anchor Standard 4: Technology

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.

Anchor Standard 5: Problem Solving and Critical Thinking

Writing Standard: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem, narrow, or broaden the inquiry when appropriate, and synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. WS 11-12.7

Anchor Standard 6: Health and Safety

Reading Standards for Science and Technical Subjects: Determine the meaning of symbols, keywords, and other domain-specific words and phrases as they are used in a specific scientific or technical context. RSTS 9-10, 11-12.4

Anchor Standard 7: Responsibility and Flexibility

Speaking and Listening Standard: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners, building on others' ideas and expressing their own clearly and persuasively. SLS 9-10, 11-12.1

Anchor Standard 8: Ethics and Legal Responsibilities

Speaking and Listening Standard: Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the work. SLS 11-12.1d

Anchor Standard 9: Leadership and Teamwork

Speaking and Listening Standard: Work with peers to promote civil, democratic discussions and decision making; set clear goals and deadlines; and establish individual roles as needed. SLS 11-12.1b

Anchor Standard 10: Technical Knowledge and Skills

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. WS 11-12.6

Anchor Standard 11: Demonstration and Application

Demonstrate and apply the knowledge and skills contained in the industry-sector anchor standards, pathway standards, and performance indicators in the classroom, laboratory, and workplace settings, and the career technical student organization. Note: no alignment evident for this standard. WS 11-12.6

CTE Model Curriculum Standards—Industry Sectors and Pathways

Public Services

B. Emergency Response Pathway

- B1.4 Describe the roles and responsibilities of emergency response agencies.*
- B2.1 Describe the mechanisms by which emergency management stakeholder agencies and resources are coordinated for mutual aid.*
- B2.3 Understand the core set of basic concepts, principles, terminology, and technologies of emergency response management.*
- B2.4 Recognize multiagency coordination; unified command, training, identification, and management of resources; qualification and certification; and the collection, tracking, evaluation, and dissemination of information.*
- B2.5 Describe the principles and responsibilities of the Incident Command System (ICS) and the National Incident Management System (NIMS).*
- B3.1 Identify the characteristics of successful teams, including leadership, cooperation, collaboration, and effective decision-making skills as applied in emergency services.*
- B3.3 Employ active listening, concise reporting, and familiarity with emergency response communication equipment to interact efficiently and effectively.*
- B3.7 Use appropriate terminology in clear, concise, and legible report entries when preparing and submitting required reports.*
- B3.8 Use and maintain a variety of communication equipment, understanding the importance of using current and up-to-date technology and communication equipment.*
- B3.9 Practice verbal and nonverbal emergency terminology and communication techniques to be used when interacting with emergency response personnel in a variety of emergency situations.*
- B4.0 Execute safety procedures and protocols associated with local, state, and federal regulations in order to effectively and safely conduct duties within fire and emergency services.*
- B4.1 Describe the basic elements of safety and survival for emergency response personnel.*
- B4.2 Know and use the appropriate personal protective equipment (PPE) required for emergency services duties.*
- B4.3 Know how to establish situational awareness, identify hazards, and assess personal, team, or environmental risks.*
- B4.6 Complete certification in emergency care as appropriate—for example, cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), and first aid.*
- B5.0 Develop the level of nutrition, fitness, strength, agility, and psychological health and wellbeing required for safely working in emergency response career fields.*
- B5.1 Understand that physical fitness and proper nutrition are needed to perform the duties of emergency response personnel.*
- B5.2 Recognize the different physical strength and agility assessments required for entrance into emergency response employment.*

- B5.3 *Apply the skills and techniques necessary for success in strength and agility testing.*
- B6.3 *Review a hazard mitigation plan to reduce death and injury for potential man-made and natural hazards.*
- B7.0 *Research and define what is considered to be hazardous materials incidents and threats.*
- B7.3 *Describe the type of damage and injury that can occur if hazardous materials are handled improperly.*
- B8.1 *Understand the history, organization, and operation of fire services.*
- B8.3 *Explain the fundamentals and scientific principles of fire behavior, combustible materials, extinguishing agents, hazardous and toxic materials, forms of energy, and fire prevention/suppression techniques for all types of fires and conditions.*
- B8.4 *Demonstrate the operation of fire protection equipment and systems.*
- B8.5 *Demonstrate the skills necessary to perform fire suppression and basic rescue operations using firefighting techniques and rescue equipment.*
- B8.6 *Identify structural characteristics of building construction types as they relate to fire protection and suppression and recognize the signs and causes of potential building collapse and other hazards.*
- B8.7 *Apply principles of proper body mechanics, including ergonomics, equipment uses, and techniques to prevent personal injury.*
- B8.8 *Participate in public education aimed at reducing loss of life and property, through programs and activities on fire prevention and safety as well as other injury-prevention education.*
- B9.1 *Understand and use medical terminology and related knowledge of anatomy, physiology, diseases, diagnoses, pharmacology, therapeutics, and common abbreviations necessary for emergency medical services.*
- B9.2 *Know the common acronyms used in fire and emergency services.*
- B9.3 *Perform technical skill and equipment use required for emergency response occupations—for example, airway, oxygen, and ventilation procedures; suction; bleeding control; shock management; cardiac arrest management; immobilization techniques; traction; splinting; transport; defibrillation; and wound management.*
- B9.6 *Manage an incident scene as the first responder, using emergency response skills appropriate to training and certification.*
- B9.11 *Describe the function of emergency vehicles, use of medical and communication equipment, and the necessity of maintaining inventory as required for emergency services practices and procedures.*
- B10.2 *Explain the role of fire personnel in wildland fires, structure fires, auto accidents, medical aid, swift-water rescue, civil disturbances, search and rescue operations, hazardous material spills, train wrecks, floods, and earthquakes.*
- B10.3 *Describe fire prevention and planning procedures to save wildland structures during a forest fire.*
- B10.4 *Assess the value of the resource management program, including the impact on timber, watershed, wildlife, and recreation.*
- B10.7 *Recognize factors that influence the start and spread of wildland fires.*

ISTE Standards for Students

1. Empowered Learner- Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

- a) Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes.*
- b) Students build networks and customize their learning environments in ways that support the learning process.*
- c) Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways*
- d) Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.*

2. Digital Citizen- Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world, and they act and model in ways that are safe, legal, and ethical.

- a) Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.*
- b) Students engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.*
- c) Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.*
- d) Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.*

3. Knowledge Constructor- Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

- a) Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.*
- b) Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.*
- c) Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.*
- d) Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.*

4. Innovative Designer- Students use a variety of technologies within a design process to identify and solve problems creating new, useful, or imaginative solutions.

- a) Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.*
- b) Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.*
- c) Students develop, test, and refine prototypes as part of a cyclical design process.*
- d) Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.*

5. Computational Thinker- Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

- a) Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.*
- b) Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.*

c) Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

d) Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

6. Creative Communicator- Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats, and digital media appropriate for their goals.

a) Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

b) Students create original works or responsibly repurpose or remix digital resources into new creations.

c) Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.

d) Students publish or present content that customizes the message and medium for their intended audiences.

7. Global Collaborator- Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

a) Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

b) Students use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.

c) Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

d) Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.