

FIRE AND RESCUE II

Fire and Rescue II; Every year, fires and other emergencies take thousands of lives and destroy property worth billions of dollars. Firefighters and emergency services workers help protect the public against these dangers by rapidly responding to a variety of emergencies. They are frequently the first emergency personnel at the scene of a traffic accident or medical emergency and may be called upon to put out a fire, treat injuries or perform other vital functions. The Fire and Rescue curriculum may include five Indiana state fire certifications: (1) Mandatory, (2) Firefighter I, (3) Firefighter II, (4) Hazardous Materials Awareness, (5) Hazardous Materials Operations. An additional two industry certifications may be earned by adding (6) First Responder, and (7) Emergency Medical Technician-Basic to the curriculum.

- DOE Code: 5826
- Recommended Grade Level: Grade 12
- Recommended Prerequisites: Fire and Rescue I
- Credits: 2-3 credits per semester, maximum of 6 credits
- Counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas
- This course is aligned with postsecondary courses for Dual Credit:
 - Ivy Tech
 - PSAF 120-1st Responder
 - PARM 102- EMT Basic

Dual Credit

This course provides the opportunity for dual credit for students who meet postsecondary requirements for earning dual credit and successfully complete the dual credit requirements of this course.

Application of Content and Multiple Hour Offerings

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences. When a course is offered for multiple hours per semester, the amount of laboratory application or work-based learning needs to be increased proportionally.

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in SkillsUSA, the CTSO for this area.

Content Standards

Domain – Building Construction

Core Standard 1 Students apply and adapt building construction concepts to prescribe appropriate actions to take in battling fires within structures.

Standards

- FRII-1.1 Describe the effects of fire and suppression activities on common building materials
- FRII -1.2 Describe items to be observed during size-up of a building
- FRII -1.3 Describe dangerous building conditions created by a fire or by actions taken while trying to extinguish a fire
- FRII -1.4 Identify indicators of building collapse
- FRII -1.5 Describe actions to take when imminent building collapse is suspected
- FRII -1.6 Describe building conditions that create additional risk in construction, renovation, and demolition

Domain – Rescue & Extrication

Core Standard 2 Students apply and adapt techniques to safely rescue and extricate victims at fire and emergency scenes.

Standards

- FRII-2.1 Discuss maintaining emergency power and lighting equipment
- FRII-2.2 Describe characteristics of hydraulic rescue tools
- FRII-2.4 Describe characteristics of nonhydraulic rescue tools
- FRII-2.5 Discuss cribbing for rescue operations
- FRII-2.6 Describe the characteristics of pneumatic tools
- FRII-2.7 Discuss lifting/pulling tools used in rescue operations
- FRII-2.8 Explain the size-up process for a vehicle incident
- FRII-2.9 Describe items to look for when assessing the need for extrication activities
- FRII-2.10 Discuss stabilizing vehicles involved in a vehicle incident
- FRII-2.11 List the three methods of gaining access to victims in vehicles
- FRII-2.12 List the most common hazards associated with wrecked passenger vehicles
- FRII-2.13 Explain the dangers associated with Supplemental Restraint Systems (SRS) and Side-Impact Protection Systems (SIPS)
- FRII-2.14 Describe basic actions taken for patient management
- FRII-2.15 Describe patient removal
- FRII-2.16 Describe laminated safety glass and tempered glass
- FRII-2.17 Discuss removing glass from vehicles
- FRII-2.18 Explain considerations when removing vehicle roof and doors
- FRII-2.19 Describe common patterns of structural collapse
- FRII-2.20 Describe the most common means of locating hidden victims in a structural collapse
- FRII-2.21 Describe structural collapse hazards
- FRII-2.22 Describe shoring
- FRII-2.23 Discuss technical rescue incidents
- FRII-2.24 Service and maintain portable power plants and lighting equipment
- FRII-2.25 Extricate a victim trapped in a motor vehicle
- FRII-2.26 Assist rescue teams

Domain – Water Supply

Core Standard 3 Students apply concepts to accessing available water reserves to fight fires on scene.

Standards

- FRII-3.1 List sources of water supply
- FRII-3.2 Describe the three methods of moving water in a system
- FRII-3.3 Discuss water treatment facilities
- FRII-3.4 Explain the operation of water storage and distribution systems
- FRII-3.5 Distinguish among the pressure measurements relevant to water supply
- FRII-3.6 Use a pitot tube

Domain-Fire Hose

Core Standard 4 Student evaluate the various types of hose appliances and testing procedures to ensure proper operation.

Standards

- FRII-4.1 Describe the characteristics of hose appliances and tools
- FRII-4.2 Explain service testing fire hose
- FRII-4.3 Discuss test site preparation for service testing fire hose
- FRII-4.4 List equipment necessary to service test fire hose
- FRII-4.5 Explain the service test procedure
- FRII-4.6 Service test fire hose

Domain-Fire Streams

Core Standard 5 Students evaluate procedures for using fire fighting foam to determine the correct techniques and situations to use it in.

Standards

- FRII-5.1 Describe the suppression characteristics of fire fighting foam
- FRII-5.2 Define terms associated with types of foam and the foam-making process
- FRII-5.3 Discuss how foam is generated
- FRII-5.4 Discuss foam concentrates
- FRII-5.5 Describe methods by which foam may be proportioned
- FRII-5.6 Discuss foam proportioners
- FRII-5.7 Discuss foam delivery devices
- FRII-5.8 List reasons for failure to generate foam or for generating poor-quality foam
- FRII-5.9 Describe foam application techniques
- FRII-5.10 Discuss hazards associated with foam concentrates
- FRII-5.11 Place a foam line in service — in-line educator

Domain- Fire Control

Core Standard 6 Students extinguish or control fires working as a member of a team and using appropriate equipment, tools, and extinguishing agents to fight various blazes.

Standards

- FRII-6.1 Demonstrate or define the methods of applying a foam fire stream
- FRII-6.2 Assemble and operate a foam fire stream using the appropriate equipment
- FRII-6.3 Select and use adapters and appliance for specific fireground situations
- FRII-6.4 Control or extinguish piles/stacks of Class A materials (exteriors) while working as a member of a team and using appropriate protective equipment, firefighting tools and

extinguishing agents

- FRII-6.5 Control or extinguish open pans of combustible liquids (exterior) while working as a member of a team and using appropriate protective equipment, firefighting tools and extinguishing agents
- FRII-6.6 Control or extinguish vehicle fires while working as a member of a team and using appropriate protective equipment, firefighting tools and extinguishing agents
- FRII-6.7 Combat a ground cover fire while working as a member of a team and using the necessary tools and equipment to report the threat to property, recognize personal safety, quickly accomplish retreat if warranted, and demonstrate or define both indirect and direct methods of attack
- FRII-6.8 Control or extinguish Class A combustible materials within a structure (interior attack) while working as a member of a team and using appropriate protective equipment, firefighting tools and extinguishing agents

Domain-Fire Systems

Core Standard 7 Students analyze various fire detection, alarm, and suppression systems to assess their role in combating fires.

Standards

- FRII-7.1 Describe types of heat detectors
- FRII-7.2 Describe types of smoke detectors/alarms
- FRII-7.3 Explain how flame detectors and fire-gas detectors operate
- FRII-7.4 Discuss combination detectors and indicating devices
- FRII-7.5 Describe types of automatic alarm systems
- FRII-7.6 Discuss supervising fire alarm systems and auxiliary services
- FRII-7.7 Describe the operation of an automatic fire sprinkler system
- FRII-7.8 Discuss water supply for sprinkler systems
- FRII-7.9 Describe major applications of sprinkler systems

Domain-Evidence

Core Standard 8 Students apply investigation concepts at fire scenes to protect evidence.

Standards

- FRII-8.1 Discuss the roles of firefighters and investigators at investigations
- FRII-8.2 Summarize important observations to be made en route, after arriving at the scene, and during fire fighting operations
- FRII-8.3 Discuss firefighter conduct and statements at the scene
- FRII-8.4 Explain firefighter responsibilities after the fire
- FRII-8.5 Explain how legal considerations affect firefighters during operations that may involve incendiary evidence
- FRII-8.6 Discuss protecting and preserving evidence
- FRII-8.7 Protect evidence of fire cause and origin

Domain-Fire Department Communications

Core Standard 9 Students evaluate fire department communication equipment and procedures to accurately respond and report incidents.

Standards

- FRI-9.1 Summarize guidelines for radio communications
- FRI-9.2 Describe information given in arrival and progress reports
- FRI-9.3 Explain the purpose of tactical channels
- FRI-9.4 Discuss calls for additional resources and emergency radio traffic
- FRI-9.5 Discuss evacuation signals and personnel accountability reports
- FRI-9.6 Summarize the information in incident reports
- FRI-9.7 Create an incident report

Domain-Fire Prevention & Public Education

Core Standard 10 – Students recommend appropriate techniques to counsel the public on fire prevention via inspections and public lessons.

Standards

- FRI-10.1 Describe a survey and an inspection
- FRII-10.2 Discuss the fire prevention activities of reviewing community data and code enforcement
- FRII-10.3 Summarize common fuel and heat-source hazards
- FRII-10.4 Discuss common fire hazards and why they increase the likelihood of a fire
- FRII-10.5 Summarize special fire hazards in commercial, manufacturing, and public-assembly occupancies
- FRII-10.6 Summarize target hazard properties
- FRII-10.7 Discuss personal requirements and equipment requirements for conducting inspections
- FRII-10.8 Discuss scheduling and conducting fire inspections
- FRII-10.9 Discuss the benefits of preincident planning surveys
- FRII-10.10 Explain how a preincident planning survey is conducted
- FRII-10.11 Explain the purpose of a residential fire safety survey
- FRII-10.12 Summarize guidelines for conducting residential fire safety surveys
- FRII-10.13 Summarize common causes of residential fires
- FRII-10.14 Summarize items to address when conducting residential fire safety surveys
- FRII-10.15 Describe the basic steps in presenting fire and life-safety information
- FRII-10.16 Discuss and conduct a fire station tours
- FRII-10.17 Prepare a preincident survey
- FRII-10.18 Conduct a residential fire safety survey
- FRII-10.19 Make a fire and life safety presentation

Process Standards

Common Core Literacy Standards for Technical Subjects

Reading Standards for Literacy in Technical Subjects 11-12

The standards below begin at grade 11 and define what students should understand and be able to do by the end of grade 12. The CCR anchor standards and high school standards in literacy work in tandem to define college and career readiness expectations – the former providing broad standards, the latter providing additional specificity.

Key Ideas and Details

- 11-12.RT.1 Cite specific textual evidence to support analysis of technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- 11-12.RT.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- 11-12.RT.3 Follow precisely a complex multistep procedure when performing technical tasks; analyze the specific results based on explanations in the text.

Craft and Structure

- 11-12.RT.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific context relevant to *grades 11-12 texts and topics*.
- 11-12.RT.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
- 11-12.RT.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

Integration of Knowledge and Idea

- 11-12.RT.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
- 11-12.RT.8 Evaluate the hypotheses, data, analysis, and conclusions in a technical subject, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
- 11-12.RT.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

Range of Reading and Level of Text Complexity

- 11-12.RT.10 By the end of grade 12, read and comprehend technical texts in the grades 11-CCR text complexity band independently and proficiently.

Writing Standards for Literacy in Technical Subjects 11-12

The standards below begin at grade 11 and define what students should understand and be able to do by the end of grade 12. The CCR anchor standards and high school standards in literacy work in tandem to define college and career readiness expectations – the former providing broad standards, the latter providing additional specificity.

Text Types and Purposes

- 11-12.WT.1 Write arguments focused on *discipline-specific content*.

- 11-12.WT.2 Write informative/explanatory texts, including technical processes.
- 11-12.WT.3 Students will not write narratives in technical subjects. *Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In technical, students must be able to write precise enough descriptions of the step-by-step procedures they use in their technical work that others can replicate them and (possibly) reach the same results.*

Production and Distribution of Writing

- 11-12.WT.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- 11-12.WT.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
- 11-12.WT.6 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.

Research to Build and Present Knowledge

- 11-12.WT.7 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; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- 11-12.WT.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation
- 11-12.WT.9 Draw evidence from informational texts to support analysis, reflection, and research.

Range of Writing

- 11-12.WT.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.