



State-Certified Prescribed-Fire Burn Boss

Course Plan

Course Details

- Certification:** State-Certified Prescribed-Fire Burn Boss
- CTS Guide:** State-Certified Prescribed-Fire Burn Boss
- Description:** This course provides information about and develops the skills required for planning and managing prescribed fire on State or private lands. The curriculum includes the minimum standards of National Wildland Fire Training (NWCG) RX301 Prescribed Fire Implementation, RX341 Prescribed Fire Plan Preparation, and RX410 Smoke Management Techniques course qualifications. This course contains instructor-led training, including simulation exercises and a task book. Students are required to complete the prerequisites (coursework, firing, and leadership requirements) prior to taking the instructor-led training and completing the task book. As detailed in the course plan, this course was developed and formatted into the SFT curriculum development model. Stakeholders are encouraged to study this information carefully and seek clarification from SFT if questions arise. Certified persons may act as contractors within land designated as State Responsibility Area (SRA) by the Department of Forestry and Fire Protection.
- Designed For:** Persons seeking certification as prescribed-fire burn bosses in accordance with SB 1260 (Jackson, Chapter 624, Statutes of 2018).
- Prerequisites:** **Coursework Requirements**
- IS-100 Introduction to the Incident Command System
 - S-190 Introduction to Wildland Fire Behavior
 - S-130 Firefighter Training
 - S-290 Intermediate Wildland Fire Behavior (classroom only, online courses not accepted)
- Firing Requirements**
- Qualified NWCG/CICCS Firing Boss (FIRB)

State-Certified Prescribed-Fire Burn Boss (2020)

or

both equivalent firing experience *and*

one of the following courses: S-219 Firing Operations, CA-219 Wildland Firefighting – Firing Operations, C-234 Ignition Operations, or S-234 Ignition Operations

Leadership Requirements

S-131 Advanced Firefighter

or

L-280 Followership to Leadership

or

Qualified NWCG/CICCS Firefighter Type 1 (FFT1)

or

Equivalent leadership experience

Standard: Complete all activities and formative tests.
Complete all summative tests with a minimum score of 80%.

Hours: Lecture: 15:15
Activities: 22:45
Testing: 2:00

Hours (Total): 40:00

Maximum Class Size: 30

Instructor Level: Primary

Instructor/Student Ratio: 1:30 lecture and activities

Restrictions: None

SFT Designation: CFSTES

State-Certified Prescribed-Fire Burn Boss (2020)

Required Resources

Instructor Resources

To teach this course, instructors need:

- SB 1260 (Jackson, Chapter 624, Statutes of 2018)
- Incident Response Pocket Guide (IRPG) NFES 001077
- Title 17 of the California Code of Regulations: Smoke Management Guidelines for Agricultural and Prescribed Burning
- Health and Safety Code
- Public Resources Code
- Access to Prescribed Fire Information Reporting System (PFIRS)
- National Weather Service Fire Weather Forecast
- Administrative access to PFIRS training platform
- Field Operations Guide (FOG) ICS 420-1
- Burn plan examples of varying complexity
- ICS 201 template
- Incident within an Incident (IWI) Form or agency equivalent
- 8-Line/Medical Incident Report (MIR) Form or agency equivalent
- “California Codes Related to Rx Fire” document
- Case study on Klamath River watershed ecology and fire
- Fireline Handbook Appendix B
- Behave Plus Fire Modeling Software
- Behave Plus Fire Modeling User’s Guide
- Wildland Fire Incident Management Field Guide (PDF available online)
- California Code of Regulations, Title 8, § 3395
- Examples of National Incident Management System Incident Action Plan (IAP)
- “Working with CAL FIRE Inmate Fire Crews”
- “Permitting and Approval Flow Chart”
- “Options for Prescribed Fire on Private Lands Flow Chart”
- “Prescribed Fire Information Reporting System (PFIRS) Instruction Sheet”

To teach this course, instructors may use:

- Fire Weather: A Guide for Application of Meteorological Information to Forest Fire Control Operations
- Learning Fire Weather: A Self-Study Course
- The Fire Environment Concept (1972, Countryman)
- Firefighter Math Self-Paced Math Course

State-Certified Prescribed-Fire Burn Boss (2020)

Online Instructor Resources

The following instructor resources are available online at

<https://osfm.fire.ca.gov/divisions/state-fire-training/cfstes-professional-certification/>:

- Prescribed Fire Information Reporting System (PFIRS):
<https://ssl.arb.ca.gov/pfirs/request.php>
- SB 1260 (Jackson, Chapter 624, Statutes of 2018)
(https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1260)
- Title 17 of the California Code of Regulations: Smoke Management Guidelines for Agricultural and Prescribed Burning
(<https://www.arb.ca.gov/smp/regs/RevFinRegwTOC.pdf>)
- Health and Safety Code
- Public Resources Code
- Incident Response Pocket Guide (IRPG) NFES 001077:
<https://www.nwcg.gov/sites/default/files/publications/pms461.pdf>
- “We’re Not Doing Enough Prescribed Fire in the Western United States to Mitigate Wildfire Risk” (2019, C. Kolden)
- Fireline Handbook Appendix B, PMS 410-2, NWCG
(<https://www.nwcg.gov/sites/default/files/products/appendixB.pdf>)
- Fire Weather: A Guide for Application of Meteorological Information to Forest Fire Control Operations: https://training.nwcg.gov/pre-courses/S390/FireWeatherHandbook/pms_425_Fire_Wx_ch_01.pdf
- The Fire Environment Concept (1972, Countryman):
https://www.frames.gov/documents/behaveplus/publications/Countryman_1972_TheFireEnvironmentConcept_ocr.pdf
- Field Operations Guide (FOG) ICS 420-1:
https://www.usfa.fema.gov/downloads/pdf/publications/field_operations_guide.pdf
- Various burn plan examples
- “Permitting and Approval Flow Chart”
- Behave Fire Modeling Software: <https://www.frames.gov/behaveplus/software-manuals>
- “PFIRS Instruction Sheet”
- “California Codes Related to Rx Fire” document
- “Working with CAL FIRE Inmate Fire Crews”
- ICS 201 template
- Wildland Fire Incident Management Field Guide (PDF available online)
- Incident within an Incident (IWI) Form
- 8-Line/Medical Incident Report (MIR) Form

State-Certified Prescribed-Fire Burn Boss (2020)

Student Resources

To participate in this course, students need:

- Laptop computer with internet capability
- Laptop cord/power supply
- Hard hat
- Boots
- Incident Response Pocket Guide (IRPG) NFES 001077 (provided by instructor)
- Login information for PFIRS (granted by instructor in class)
- Fireline Handbook Appendix B, PMS 410-2, NWCG
(<https://www.nwcg.gov/sites/default/files/products/appendixB.pdf>)
- ICS 201 template
- Incident within an Incident (IWI) Form or agency equivalent
- 8-Line/Medical Incident Report (MIR) Form or agency equivalent
- “California Codes Related to Rx Fire” document
- Case study on Klamath River watershed ecology and fire
- Fireline Handbook Appendix B
- Wildland Fire Incident Management Field Guide (PDF available online)
- California Code of Regulations, Title 8, § 3395
- California Code of Regulations, Title 17
- Examples of National Incident Management System IAP
- “Working with CAL Fire Inmate Fire Crews”
- “Permitting and Approval Flow Chart”
- “Options for Prescribed Fire on Private Lands Flow Chart”
- Behave Plus Fire Modeling Software

Facilities, Equipment, and Personnel

The following facilities, equipment, or personnel are required to deliver this course:

- Classroom with internet access
- Projector and screen

The following facilities, equipment, or personnel are optional:

- Air district representative
- Fire Behavior Analyst (FBAN) or Incident Meteorologist (IMET)
- Local unit CAL FIRE representative
- Local fire district representative
- Local tribal representative
- Representative from community-based prescribed-fire group
- Sand table
- Simulation software
- Outdoor site for simulated burn

State-Certified Prescribed-Fire Burn Boss (2020)

Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

Enabling Learning Objectives

1. Identify facility requirements
 - Restroom locations
 - Food locations
 - Smoking locations
 - Emergency procedures
2. Identify classroom requirements
 - Start and end times
 - Breaks
 - Electronic device policies
 - Special needs and accommodations
 - Other requirements as applicable
3. Review course syllabus
 - Course objectives
 - Calendar of events
 - Course requirements
 - Student evaluation process
 - Assignments
 - Activities
 - Required student resources
 - Class participation requirements

Discussion Questions

1. What is a formative test? What is a summative test?

Activities

1. To be determined by the instructor.

Instructor Notes

1. The instructor should guide students through the process of applying for PFIRS accounts on day 1. (<https://ssl.arb.ca.gov/pfirs/request.php>)

State-Certified Prescribed-Fire Burn Boss (2020)

Topic 1-2: State-Certified Prescribed-Fire Burn Boss Certification Process

Terminal Learning Objective

At the end of this topic, a student will be able to identify different levels in the State-Certified Prescribed-Fire Burn Boss certification track, the courses and requirements for Level 1 certification, and be able to describe the task book and testing process.

Enabling Learning Objectives

1. Identify the different levels of certification in the State-Certified Prescribed-Fire Burn Boss certification track
 - Level 1
2. Identify the courses required for Level 1
 - State-Certified Prescribed-Fire Burn Boss
3. Identify any other requirements for Level 1
4. Describe the task book process
 - Complete all prerequisites and course work
 - Submit application to request task book
 - Complete all job performance requirements included in the task book
 - Must have identified evaluator verify individual task completion via signature

Discussion Questions

1. How many levels are there in the State-Certified Prescribed-Fire Burn Boss certification track? What are they?

Activities

1. To be determined by the instructor.

Unit 2: Fire History and Prescribed-Fire Laws

Topic 2-1: Describing the History and the Role of Fire

Terminal Learning Objective

At the end of this topic, given current and historical conditions, a student will be able to describe the history and the role of fire in the State of California.

Enabling Learning Objectives

1. Describe basic fire adaptations in California ecosystems
2. Describe the human relationship with fire and impacts to the ecosystem
 - Historical
 - Contemporary
3. Define prescribed fire
4. Describe the use of prescribed fire to meet various management goals, including local examples

Discussion Questions

1. What is the history of prescribed fire in your community?
2. How have humans shaped fire regimes in California over time?

State-Certified Prescribed-Fire Burn Boss (2020)

3. What are some basic ecological fire adaptations?

Activities

1. To be determined by the instructor.

Instructor Notes

1. Instructor should cover Traditional Ecological Knowledge (TEK).
2. Instructor should refer to reference reading in the Instructor's Corner.

CTS Guide Reference: CTS 1-1

Topic 2-2: Identifying Laws and Regulations Governing Prescribed Fire

Terminal Learning Objective

At the end of this topic, given a list of applicable laws and regulations and a variety of projects, a student will be able to identify laws and regulations governing prescribed fire in the State of California.

Enabling Learning Objectives

1. Identify all applicable and current federal, State, and local laws and regulations, including but not limited to:
 - Public Resources Code, including changes made via SB 1260 (Jackson, Chapter 624, Statutes of 2018) and SB 901 (Dodd, Chapter 626, Statutes of 2018)
 - Health and Safety Code
 - California Environmental Quality Act (CEQA)
 - National Environmental Policy Act (NEPA)
 - Title 17 of the California Code of Regulations: Smoke Management Guidelines for Agricultural and Prescribed Burning
 - California Code of Regulations, Title 8 § 3395
 - Air quality management district rules
2. Describe the role and responsibilities of a State Certified Prescribed-Fire Burn Boss
3. Describe liability considerations and due diligence

Discussion Questions

1. Why is it important to be familiar with laws and regulations governing prescribed fire in California?
2. When do CEQA and NEPA apply?
3. What are some ways you can mitigate liability for prescribed-fire users?

Activities

1. The instructor may choose to have students research their local air quality management district's rules.

Instructor Notes

1. The instructor should refer to the chaptered language included in SB 1260's coverage of liability and due diligence and to current versions of Public Resources Code and Health and Safety Code.
2. The instructor may refer to "California Codes Related to Rx Fire," but must verify the most current laws and regulations.

State-Certified Prescribed-Fire Burn Boss (2020)

3. This topic needs to cover the current interpretation of the laws, including permits, the shared liability model, cooperative agreements, and relationships with stakeholders.

CTS Guide Reference: CTS 1-2

Unit 3: Burn Plans, Permits and Approvals, and Operations

Topic 3-1: Describing How Fire-Behavior Concepts Relate to Prescribed-Fire Implementation

Terminal Learning Objective

At the end of this topic, given a project, a student will be able to describe how fire-behavior concepts relate to prescribed-fire implementation, so that they can incorporate fire-behavior factors into the burn plan.

Enabling Learning Objectives

1. Identify general fire-behavior factors that influence prescribed fire
 - Relationship between fuels, weather, and topography
 - Weather factors such as diurnal winds, inversions, and microclimates
 - Fuel factors such as burn-down times and fuel moisture

Discussion Questions

1. Why is it important to predict fire behavior during and after a prescribed fire?
2. What local weather or other influences can you identify that might impact your prescribed fire?

Activities

1. To be determined by instructor

Instructor Notes

1. The instructor must bring in case studies to demonstrate and discuss how fire-behavior concepts relate to prescribed fire.
2. The instructor may choose to incorporate a Fire Behavior Analyst (FBAN) or Incident Meteorologist (IMET).

CTS Guide Reference: CTS 2-1

Topic 3-2: Developing a Burn Plan

Terminal Learning Objective

At the end of this topic, given a project area, a student will be able to develop a burn plan, so that competency is demonstrated and the plan can mitigate risk and achieve desired objectives.

Enabling Learning Objectives

1. Identify common elements of a burn plan
 - Site or project description
 - Fuel
 - Local weather patterns

State-Certified Prescribed-Fire Burn Boss (2020)

- Topography
 - Vicinity and project maps
 - Goals and objectives
 - Prescription parameters
 - Environmental
 - Fire behavior
 - Preburn considerations, including on- and off-site requirements
 - Ignition, holding, and contingency plan
 - Minimum resource requirements
 - Go/no-go checklists
 - Test fire
 - Wildfire conversion plan
 - Management action points
 - Risk-management considerations
 - Postburn criteria
2. Develop goals and objectives for the prescribed fire
 3. Develop a prescription to meet the identified goals and objectives
 4. Develop a burn plan that includes common elements

Discussion Questions

1. Why is it important to have clearly identified goals and objectives?
2. What cultural and ecological criteria should be considered when developing burn goals and objectives?
3. When should a burn plan be reviewed?
4. When should a burn plan be amended?
5. What tools can be used in the development of a prescription and for determining holding resource requirements?

Activities

1. The instructor must create an activity directing students to develop and present a burn plan.
2. The instructor must create an activity directing students to use modeling tools to develop prescription parameters, such as *Behave Fire Modeling System* or *Appendix B*.

Instructor Notes

1. It is recommended that the instructor take the students to a potential burn site, perform an assessment, and develop their burn plans based on that. The instructor may have students work in small groups to develop and present the burn plan.
2. Since this can be a lengthy lecture, the instructor must weave the activities in with the instruction, directing students to complete the portions of the activity that they have just been instructed on rather than waiting until the end of the topic.
3. The instructor may bring in examples of burn plan amendments.
4. The instructor should have students consider locally relevant cultural and ecological factors in the goals and objectives.

State-Certified Prescribed-Fire Burn Boss (2020)

CTS Guide Reference: CTS 2-2

Topic 3-3: Describing and Demonstrating the Permitting and Approval Process

Terminal Learning Objective

At the end of this topic, given a prescribed-fire project and local permitting requirements, a student will be able to describe and demonstrate the permitting and approval process for prescribed fire, so that all requirements are met.

Enabling Learning Objectives

1. Describe different options for implementation of prescribed fires on private lands
 - Agency-led programs
 - Community-based programs
 - Landowner-led options
 - Private contractors
2. Describe State and local permitting processes
 - Authority having jurisdiction (AHJ)
 - Federal, state, local
 - Air quality management district
3. Describe smoke-management reporting systems, including PFIRS
4. Demonstrate use of smoke-management reporting systems, including PFIRS

Discussion Questions

1. How do you determine the AHJ?
2. How do permit requirements vary at different times of year and by location?
3. Why is a smoke-management plan important?
4. How does burn-day status affect your ability to implement prescribed fire?
5. Why is it important to build trust and relationships with your federal, State, and local partners?

Activities

1. The instructor must direct students to use PFIRS to create a smoke-management plan.

Instructor Notes

1. The instructor can have the students role-play going through the permitting process.
2. Ensure that the students are using the PFIRS training platform for ELO #4.
3. The instructor must use "PFIRS Instruction Sheet."
4. If the region doesn't use PFIRS, instructors should also guide students in the use of their local smoke-management reporting system.
5. The instructor should refer to the flow chart when discussing the options for implementation of prescribed fires on private lands.
6. It is highly recommended that the instructor invite the local Vegetation Management Program (VMP) coordinator as well as representatives from community-based prescribed-fire groups to speak.

State-Certified Prescribed-Fire Burn Boss (2020)

CTS Guide Reference: CTS 2-3

Topic 3-4: Implementing a Prescribed-Fire Operation

Terminal Learning Objective

At the end of this topic, given a prescribed-fire burn plan, a project, and required permits and approvals, a student will be able to implement a prescribed-fire operation in accordance with the burn plan, so that objectives are addressed, risk is mitigated, and safety is maintained.

Enabling Learning Objectives

1. Develop an Incident Action Plan (IAP)
 - Management and control objectives
 - Safety considerations
 - Communications plan
 - Prescribed burn organization
 - Resource management and coordination
 - Operational leadership
 - Interagency cooperation
 - Medical plan
 - Operational map
 - Weather forecast
2. Conduct an operational briefing that addresses all components of the IAP
3. Describe methods of monitoring fire behavior and managing operational resources to meet objectives
4. Describe the notification process
 - Preburn
 - Day of
 - Postburn
5. Identify logistical support needs
6. Describe the process of ensuring logistical support needs are met
7. List examples of required documentation
8. Simulate the implementation of postburn procedures
 - After-action review (AAR)
 - Postburn notifications
 - Mop-up and patrol
 - Transfer of responsibility

Discussion Questions

1. Who should be notified on the day of the burn?
2. What are the benefits of a thorough briefing?
3. Why is it important to monitor and recognize changes in the fire environment?
4. What are common logistical support resources needed for prescribed fires?
5. Why is radio discipline on the fireline important?
6. Why is it important to continue patrol and mop up after the day of ignitions?

State-Certified Prescribed-Fire Burn Boss (2020)

7. Why is it important to conduct an AAR?

Activities

1. The instructor must create an activity directing groups of students to develop an IAP, including identifying logistical support needs, and present an operational briefing using the IAP.
2. The instructor must create an activity simulating a student-led prescribed-fire operation, including an AAR.

Instructor Notes

1. Since this can be a lengthy lecture, the instructor must weave the activities in with the instruction, directing students to complete the portions of the activity that they have just been instructed on rather than waiting until the end of the topic.
2. Simulations can use sand tables, software, or table-top exercises, or be in the field.
3. The instructor must cover communication of leader's intent.
4. It is recommended that the instructor have the students simulate fireline communications.
5. The instructor should cover fire weather forecasts, including how to submit, retrieve, and interpret an NWS Spot Weather Forecast.
6. During IAP development, the instructor may need to review basic ICS terminology.

CTS Guide Reference: CTS 2-4



State-Certified Prescribed-Fire Burn Boss (2020)

Time Table

Segment	Lecture Time	Activity Time	Total Unit Time
Unit 1: Introduction			
Topic 1-1: Orientation and Administration			
Lecture	0:30		
Activity 1-1: To be determined by instructor		0:00	
Topic 1-2: State-Certified Prescribed-Fire Burn Boss Certification Process			
Lecture	0:30		
Activity 1-2: To be determined by instructor		0:00	
Unit 1 Totals	1:00	0:00	1:00
Unit 2: Fire History and Prescribed-Fire Laws			
Topic 2-1: Describing the Role and History of Fire			
Lecture	1:30		
Activity 2-1: To be determined by the instructor		0:00	
Topic 2-2: Identifying Laws and Regulations Governing Prescribed Fire			
Lecture	1:30		
Activity 2-2: Recommended by SFT		0:45	
Unit 2 Totals	3:00	0:45	3:45
Unit 3: Burn Plans, Permits and Approvals, and Operations			
Topic 3-1: Describing How Fire-Behavior Concepts Relate to Prescribed-Fire Implementation			
Lecture	3:00		
Activity 3-1: To be determined by instructor		0:00	
Topic 3-2: Developing a Burn Plan			
Lecture	5:00		
Activity 3-2a: Developing and Presenting a Burn Plan		8:00	
Activity 3-2b: Using Modeling Tools to Develop Prescription Parameters		4:00	

State-Certified Prescribed-Fire Burn Boss (2020)

Segment	Lecture Time	Activity Time	Total Unit Time
Topic 3-3: Describing and Demonstrating the Permitting and Approval Process			
Lecture	1:30		
Activity 3-3: Using PFIRS to Create a Smoke-Management Plan		1:30	
Topic 3-4: Implementing a Prescribed-Fire Operation			
Lecture	2:15		
Activity 3-4a: Developing an IAP and Presenting an Operational Briefing		4:00	
Activity 3-4b: Prescribed-Fire Operations		4:00	
Unit 3 Totals	11:45	21:30	33:15
Lecture, Activity, and Unit Totals:	15:75	22:15	38:00

Course Totals

Total Lecture Time (LT)	15:15
Total Activity Time (AT)	22:45
Total Testing Time (TT)	2:00
Total Course Time	38:00