



S-390: Introduction to Wildland Fire Behavior Calculations (2007)

Course Plan

Course Details

Description:	This course is designed to introduce fire behavior calculations by manual methods, using nomograms and the Fireline Handbook Appendix B: Fire Behavior, PMS 410-2. Students gain an understanding of the determinants of fire behavior through studying inputs (weather, slope, fuels, and fuel moisture). Students also learn how to interpret fire behavior outputs, documentation processes, and fire behavior briefing components.
Designed For:	Personnel desiring to be qualified as Division/Group Supervisor (DIVS), Prescribed Fire Burn Boss Type 2 (RXB2), or Incident Commander Type 3 (ICT3).
Authority:	National Wildfire Coordinating Group (NWCG)
Prerequisites:	Intermediate S-290, Wildland Fire Behavior; qualified as any single resource boss; satisfactory completion of pre-selection assessment and pre-course work.
Standard:	N/A
Hours:	32 hours
Maximum Class Size:	40 (24 Recommended by NWCG)Primary
Instructor Level:	instructor
Instructor/Student Ratio:	1 primary instructor per 40 students (NWCG Recommends 1:6)
Restrictions:	Limited to Instructor-Led Delivery only.
SFT Designation:	FSTEP

Required Resources

Online Instructor Resources

The following instructor resources are available online at <https://www.nwcg.gov/publications/training-courses/s-390>

- Instructor-led delivery course materials
- Instructor Guide
- Student Workbook

Student Resources

To participate in this course, students need:

- Student workbook
- How to Predict the spread and Intensity of Forest and Range Fires
- Aids to Determining Fuel Models for Estimating Fire Behavior
- Fireline Handbook Appendix B – Fire Behavior, PMS 410-2
- Fire Behavior Nomograms, PMS 436-3

Facilities, Equipment, and Personnel

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

Facilities

- Standard classroom equipped for 24 students
- Whiteboards or easel pads with appropriate writing implements
- Projector/TV with appropriate laptop connections
- Wifi/Internet access

Equipment

- Map 1 and Map 2 for TDGS exercises will need to be printed on a plotter at a minimum size of 24" x 36".
- Sand tables for TDGS exercises.

Time Table

Segment			Unit Total
Unit 0: Introduction			1.0
Unit 1: Topography			0.5
Unit 2: Weather			5.0
Unit 3: USFBPS Fuel Models			2.0
Unit 4: Fuel Moisture			3.0
Unit 5: Fire Behavior Models			8.0
Unit 6: Fire Growth			2.5
Unit 7: Extreme Fire Behavior			1.5
Unit 8: Documentation, Briefings, and Monitoring for Fireline Safety			0.5
Unit 9: Final Group Exercise			2.0
Final Exam			2.0
Close Out			0.5
Course Totals			28.5

Time Table Key

1. The Time Table documents the amount of time required to deliver the content included in the course plan.
2. Time is documented using the quarter system: 15 min. = .25 / 30 min. = .50 / 45 min. = .75 / 60 min. = 1.0.
3. The Course Totals do not reflect time for lunch (1 hour) or breaks (10 minutes per each 50 minutes of instruction or assessment). It is the instructor's responsibility to add this time based on the course delivery schedule.
4. Application (activities, skills exercises, and formative testing) time will vary depending on the number of students enrolled and the acquired structure selected for training. The Application time documented is based on the maximum class size identified in the Course Details section.
5. Summative Assessments are determined and scheduled by the authority having jurisdiction. These are not the written or psychomotor State Fire Training certification exams. These are in-class assessments to evaluate student progress and calculate course grades.

Objectives

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1. List the assumptions, limitations, and appropriate uses of fire behavior prediction models.
2. Describe how environmental factors and processes affect fire behavior predictions and safety.
3. Define and interpret fire behavior prediction model inputs.
4. Calculate fire behavior outputs using available fire behavior processors.
5. Interpret, communicate, apply, and document wildland fire behavior and weather information.