CHAPTER I

INTRODUCTION

ABOUT THIS COURSE

The Interagency Basic Prescribed Fire Training Program has been developed by cooperating agencies, organizations and individuals and has been designed for those who participate in the use of prescribed fire in Florida. This course and manual have also been designed to meet Florida Division of Forestry (DOF) training requirements for the Certified Burn Manager Program. Students who successfully complete this course may contact the DOF to continue with the certification process. The DOF currently requires each applicant to document and fulfill field training standards and demonstrate proficiency in managing a prescribed burn. This includes participation in prescribed burns, proficiency in all subject areas associated with Florida prescribed burns, and the planning and completion of one prescribed burn. The applicant will be required to prepare a written plan, conduct the burn, complete mop-up, and declare the fire out. While the course has been developed specifically for Florida, the principles and science incorporated herein may be modified for use outside of this state.

Fire management is a hazardous occupation. Clear communication between personnel is crucial to the safe and efficient completion of assigned duties. It is thus incumbent upon fire management personnel to use correct terminology, but this is no easy task. The fire management field has developed many new terms and standard dictionary terms often have specific connotations and nuances. To help those involved in prescribed fire activities overcome these obstacles, a glossary is provided (Appendix I). This glossary should be reviewed prior to working on individual chapters.

LEARNING OBJECTIVES

This course prepares students for participation in all phases of prescribed burning. It currently meets the ***basic educational*** requirement for the Florida Division of Forestry ***CERTIFIED BURN MANAGER*** program. This course has been divided into thirteen chapters. Chapters one through nine cover basic subject areas which must be incorporated in every prescribed burn. Chapters ten through twelve cover the four operational phases associated with every prescribed burn. The final chapter, Managing the Burn, is designed to allow the student the opportunity to apply the course material during field exercises. If weather and site conditions are favorable the field exercise will include participation in prescribed burns and will cover all operational phases.

COURSE OBJECTIVES

1. Identify those factors of fire intensity and severity which affect natural resources.
2. Identify the requirements and components for developing proper burn prescriptions and operational plans.
3. Identify burn techniques that need to be applied to meet burn plan requirements.

4. Develop a burn prescription and an operational plan for given land management objectives, fire history, weather data, and fuel type and loading.
5. Safely execute the operational plan, accomplishing local management objectives and meeting established operating guidelines.
6. Evaluate immediate post-burn fire effects with emphasis on management objectives.

CHAPTER OBJECTIVES

WHY WE BURN

1. Identify the need for Prescribed Fire.
2. Explain the historical relationship between Florida and fire.

LEGAL REQUIREMENTS

1. Demonstrate a complete understanding of ***laws***, ***rules*** and ***procedures*** which regulate open burning in Florida.
2. Demonstrate knowledge of the burner's legal obligations.

PUBLIC RELATIONS

1. Explain the difference between agency and individual responsibilities.
2. Identify with the public's fears and how they should be addressed.
3. Identify tactics for building a good Prescribed Fire Public Relations Program.

SAFETY

1. Explain why fire safety must be given the same priority on prescribed fire as it is given on wildfire.
2. Identify the need for a written burn plan, as it relates to safety.
3. List all essential items of personal protective equipment to be used on prescribed burns.
4. Apply standard principles of fire line safety to prescribed fire operations.

SMOKE MANAGEMENT

1. List major pollutants associated with wildland fire.
2. Identify smoke-sensitive areas (SSAs) and explain the designation of a ***Critical smoke –sensitive area.***
3. List the current legal requirements for managing smoke produced during prescribed fires.
4. Identify situations that can lead to smoke intrusions.
5. Relate the dispersion index to smoke management for both day and night conditions.
6. Identify ignition strategies that reduce undesirable emissions.
7. Describe and implement the smoke screening system taught in this course.

WEATHER

1. Describe the various types of wind and how wind influences fire behavior.
2. Understand the temperature/humidity relationship.
3. Define stability, inversion, mixing height, dispersion index and transport wind speed.
4. List the methods by which heat is transferred, and how weather affects these.
5. Explain the sea breeze process and the possible effects on prescribed fires.
6. Describe the passage of a typical cold front in Florida, particularly as it relates to wind and temperature.
7. List the influences of thunderstorms on fire behavior.
8. Understand the differences and usages of the daily planning, spot, red flag event and other weather forecasts.
9. Use a Belt Weather Kit to take a representative weather observation
10. Discuss the steps in obtaining a spot weather forecast.

FIRE BEHAVIOR

1. Identify Fire Behavior Terms.
2. Explain the fire triangle.
3. Discuss the major elements of the fire environment.
4. List and explain the three methods of heat transfer.
5. List fuel characteristics which govern combustion.
6. Identify Fuel Models and examples in Florida.
7. Explain the difference between fire intensity and severity and how both can be regulated and measured.
8. Define residence time and why it is significant in prescribed fire.
9. Discuss indicators of erratic or potentially erratic fire behavior.

ECOLOGICAL EFFECTS

1. Identify fire's primary impacts on basic ecosystem components (soils, water, flora and fauna).
2. Demonstrate a basic understanding of how fire impacts ecosystems.

PLANNING

1. Identify the key elements to be addressed in every burn plan.
2. Write clear and measurable objectives for specific burns.
3. Describe the contingency plan elements for an escaped prescribed fire in Florida.
4. Develop a prescription which meets legal requirements, landowner directives, and best management practices for Florida.
5. Execute an evaluation for a prescribed burn.

FIRING TECHNIQUES

1. Explain the characteristics of head, flanking, and backing fires.
2. Describe the application of four common ignition patterns.

3. Describe safety concerns associated with specific ignition patterns.
4. List the factors that determine the appropriate firing technique.
5. Develop an ignition plan for a specific scenario.
6. Describe the proper method of preparing a pile/windrow for burning.

HOLDING AND CONTINGENCIES

1. Demonstrate and describe how to maintain a fire within an authorized area.
2. Demonstrate and describe what to do WHEN a prescribed fire escapes or burns out of prescription.
3. Discuss standards for Mop-Up and Declaring the Fire Out.

MANAGING THE BURN

1. Acquire knowledge regarding factors involved in managing a prescribed fire during each operational phase.
2. Have hands on experience in safely conducting a prescribed burn.

COURSE PROCEDURES

This course is offered by Hillsborough Community College through the Department of Environmental Programs located at the Plant City Campus. An Interagency Steering Committee sets course dates each summer. Registration is normally open in September and classes are held throughout the state from November through June.

In addition to the scheduled instruction each student receives a pre-work assignment ***which must be completed and submitted at the beginning of class.*** The time required for this exercise will be different for each student but a minimum commitment of 40 hours is recommended.

The materials covered in this manual will be reviewed and demonstrated during the scheduled class sessions. Students should be prepared to participate in field exercises including prescribed burns. Each student should bring standard Personal Protective Equipment to the class or make arrangements with the course coordinator to borrow required equipment prior to the class. Students are encouraged to bring additional equipment including hand tools, radios, and suppression equipment after consulting their supervisor and the class coordinator.

Class schedules have been designed for an ***intensive*** one week session beginning on Sunday afternoon and ending on Friday morning. Most scheduled instruction occurs between 8:00 AM and 6:00 PM. However, field exercises and review sessions frequently extend beyond 6:00 PM and students should be prepared for a substantial time commitment during this six day period. The time commitment will vary for each individual but with travel and study time included it is not unusual for students to exceed 60 hours during the session. Class attendance is mandatory. Students who do not meet this requirement will not be allowed to take the final exam.

COURSE AGENDA

Registration Students are encouraged to register as soon as the courses are announced. This usually occurs during the first week of September. Registration must be completed at least two months prior to the class session. Early registration allows each student to receive the course manual and pre-work at least four weeks prior to class.

Pre-work During the month before class students are encouraged to review the manual with emphasis on information related to the written pre-work assignment. This written assignment must be completed before classes begin.

Class Sessions Classes are normally scheduled beginning on Sunday and ending on Friday morning. It is important to remember that field exercises and other course requirements may cause fluctuations in this schedule. **Some sessions will extend beyond the indicated time and each student should be prepared stay until 6:00 PM on Sunday and Monday. On Tuesday, Wednesday, and Thursday field exercises may extend *well beyond 6:00 PM*.**

COURSE COMPLETION

Students will receive a final grade by adding the written pre work score (20 Points Maximum) and the final exam score (80 Points Maximum). The passing grade for this course is 80.

Students pursuing ***Certification*** as a Burn Manager are required to pass this course before continuing the certification process with the Division of Forestry. Some agencies may also require those participating in prescribed burns on a regular basis to also pass this course. Any student who has completed the course work but failed the exam may within one calendar year resubmit the pre-work and retake the exam.

TEAMWORK

Success in this course requires a substantial commitment from each student. Students with little experience will have to spend extra time reviewing materials and terminology while 'experienced burners' may have to awaken long dormant learning skills. Hillsborough Community College and the individual Instructors are dedicated to maintaining this course as a valuable learning tool for prescribed burners. The student can find additional valuable information on a variety of web sites. Many of those web sites are listed in Appendix J. For example the DOF web site includes valuable information on this course including many of the power point presentations. These include figures and diagrams which supplement the individual chapters.

Each student is encouraged to approach this course as an important team member. Diligent completion of the pre-work, formation of study groups, class participation and maintaining a positive attitude throughout this process will make this course both productive and enjoyable.

CLASS SCHEDULE (Ending times may be extended; see course agenda)

SUNDAY

13:00 - 13:45	Check-in, Orientation, and Introduction
13:45 - 14:45	Why We burn
14:45 - 16:30	Legal Requirements
16:30 - 17:30	Public Relations

MONDAY

08:00 - 10:00	Safety
10:00 - 12:00	Smoke Management
Lunch	
13:00 - 15:30	Fire Weather
15:30 - 17:30	Fire Behavior

TUESDAY

08:00 - 10:00	Ecological Effects
10:00 - 12:00	Firing Techniques
Lunch	
13:00 - 17:30	Planning and Evaluation (Including Field Exercise)

WEDNESDAY

08:00 - 09:00	Holding and Contingencies
09:00 - 12:00	Managing the Burn
Field Lunch	
13:00 - 17:30	Managing the Burn

THURSDAY

08:00 - 09:00	Evaluation – Previous Day's Burn
09:00 - 12:00	Managing the Burn
Field Lunch	
13:00 - 17:00+	Managing the Burn
17:00 - 17:30+	Evaluation

FRIDAY

08:00 - 08:15	Course Administration
08:15 - 11:30	**FINAL EXAM**