***Reedley College*** *– Natural Resources/Forestry/Wildland Fire Technology*



**Course:** NR 97 – Section 53428-**M,T,W – 8:00 to 14:50**

**Title:** **Wildland Fire School Fundamentals-Academy**

**Dates:** January 11, 2021 to FINALS WEEK May 17-21, 2021

**Room:** FEM 7 and off Campus Locations (personal transportation will be required)

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**Syllabus**

**Instructor:** Adam Hernandez

**Office Telephone:** (559)638-0300 ex. 3496

**Email:** adam.hernandez@reedleycollege.edu

**Office Location:** FEM-10

**Office Hours: CANVAS, EMAIL or ZOOM:** TUESDAY- 15:00-16:00,WEDNESDAY- 15:00-16:00,THURSDAY- 12:00-14:00, FRIDAY 8:00-9:00.

**Drop Deadline: March 12, 2021** – Last day to drop for full refund

**Final Exam:** TBD

# Laboratory Handbooks (Provided)

#1 - Incident Response Pocket Guide (IRPG)

#2 – Leading in the Wildland Fire Service

**Laboratory Guidebooks on the Internet (Download Required)**

1. **“**Wildland Fire Incident Management Field Operations Guide” (PMS 210) January 2014.
2. “National Incident Management System Emergency Responder Field Operations Guide” (October 2010)

\*\* Documents available on the Internet (google them) and will be useful for homework assignments. Other online guidebooks may be announced in class.

**Course Prerequisite:** Eligibility for ENGL 125, ENGL 126, and MATH 101. (A, CSU)

SPRING 2021 ACEDEMIC CALENDAR

**NR-97 Wildland Fire School - Fundamentals**

**Course Description:**

The Wildland Fire School Fundamentals course is a rigorous work simulation program that trains students for the wildland fire suppression and fuels reduction service. Students who complete the Wildland Fire School Fundamentals will be fully qualified to fill the position as a Federal wildland firefighter under the National Wildland Fire Coordinating Group (NWCG) Standards. This program’s training approach is rooted in its field-based lessons where the students are first trained in the classroom then are prepared in the wildland environment that mimics fire-based scenarios and proficiency drills. 60-70 percent of the training hours will be in the field utilizing various forest and timberland environments as well as cooperative local agency projects. The Wildland Fire School Fundamentals is targeted for students who are interested in pursuing jobs in the field of wildland fire suppression and fuels management. This course is the pathway foundation for Career Technical Education training and degree programs specializing in wildland fire suppression and fuels management under the Natural Resource land management agencies.

**Course Objectives:**

This course is a wildland fire preparedness course comprised of four National Wildland Fire Coordinating Group (NWCG) and one Federal Emergency Management (FEMA) courses. It will prepare students for entry-level wildland fire suppression employment with State and Federal wildland fire agencies. NWCG and FEMA Certifications for S-130 Basic Firefighter, S-190 Introduction to Fire Behavior, L-180 Human Factors in Wildland Fire Service, IS-700 Introduction to the National Incident Management System, and I-100 Introduction to the Incident Command System will be offered.

This class also strives to develop physical skills that are necessary for arduous wildland firefighting work. Fire line construction, hand tool maintenance, fire shelter deployment, fire hose drills, fire engine operations, and foot travel in complex terrain are components of our lab exercises.

**Learning Outcomes:**

In the process of completing this course students should acquire the following Learning Outcomes and Objectives

**Course Objectives**

1. Determine safe efficient line construction tactics and knowledge of fundamental fire behavior factors including fuels, topography and weather.

2. Demonstrate a working knowledge of the factors effecting human performance in high risk environments, make corrections as appropriate.

3. Explain the fundamentals of prescribed fire and fuels reduction operations and the associated tactics and equipment.

3. Demonstrate initiative and action in the absence of orders.

4. Identify problematic conditions and implement basic corrective measures.

5. Utilize hand tools and chainsaws to cut trees, brush and other vegetation for fireline construction and fuels management projects.

**CSLOs**

**NR-97 SLO1: Efficiently construct fireline under varying scenario-based conditions while considering fire behavior, fuels, topography and weather conditions as a member of a cohesive wildland fire crew.** Expected SLO Performance: 70.0

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**NR-97 SLO2: Under a progressive wildland fire scenario, receive orders and apply appropriate tactics and safety mitigations.** Expected SLO Performance: 70.0

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**NR-97 SLO3: Identify wildfire situations where rules of engagement would apply in order to properly respond to the changing wildland fire environment.** Expected SLO Performance: 70.0

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**NR-97 SLO4: Apply knowledge of human factors and hazardous behaviors under adverse working conditions.** Expected SLO Performance: 70.0

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**NR-97 SLO5: Gain work task-proficiency through physical training and fire suppression work activities.** Expected SLO Performance: 70.0

**Online:**

Portions of this class may be conducted online and will be announced by the instructor. **CANVAS** **& REMIND APP** will be used for disseminating messages, information and assignments.

**Participation in Laboratory work:** Field exercises (labs) are scheduled regardless of weather. At times temperatures may be over 100 degrees or rainy conditions may be present. Students need to be prepared to hike continuously for 3 miles over rough terrain at a moderate pace under the weather conditions of the day. Students will learn and demonstrate how to use hand-tools (shovels, Pulaskis, and Mcleods) to construct fire control line and use fire hose and appliances to construct hose lays. It is strongly recommended that students be in good physical condition to perform arduous tasks. The intent of the field exercises is to prepare the students for what can be expected of them as a wildland firefighter both technically and physically.

Firefighting is a particularly labor-intensive task. Safety and success depend on every person’s full participation. In this class you will be practicing actual fire-line work. For the safety of others, and yourself, you must perform in a responsible manner. You must have your own PPE in order to participate in laboratories. **You will be charged an absence and not be allowed to participation if you are not prepared for field tasks.**

Your performance in the physical laboratory training is assessed as a part of your participation grade. If you cannot safely carry out the tasks for any reason, including a health condition, you should notify the instructor. Consideration will be given to modify the requirements on an individual basis.

**Class Notification:** Class notifications will be made by your instructor through **REMIND APP** and or **CANVAS.** You are ***required*** to monitor these communications methods for course updates, information sharing and assignments. When a message is disseminated you are required to respond that you have received the message.

**Cancelled Class Notification:** Communications for class cancellations will be made by your instructorthrough **the REMIND APP and or CANVAS.**

**Academic Dishonesty, Plagiarism and Cheating:**

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly obtained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences. Refer to the college catalog for further details surrounding actions that will be implemented regarding academic dishonesty.

Plagiarism is the adoption or reproduction of the ideas or words or statements of another person without due acknowledgment. Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers in an attempt to gain an unearned academic advantage. Cheating can take the form of the storing of information in graphing calculators, pagers, cell phones, and other electronic devices. Therefore, no items of any kind may be on the desktop, including water bottles, during testing. Students may not wear hats/caps during testing. Incidents of cheating and plagiarism may result in a variety of sanctions and penalties, which may range from a failing grade on a particular examination, paper, project, or assignment in question to a failing grade in the course at the discretion of the instructor and depending upon the severity and frequency of the incidents.

**Accommodations for students with disabilities**:

 If you have a verified need for an academic accommodation or materials in alternate media (e.g., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act please contact me as soon as possible. **A formal counseling assessment to determine the appropriate accommodation is required before any accommodation(s) can be made. The counseling center facilitates the process.**

**Field Trip**: Weather and various conditions play a role in the fieldtrip learning. For this reason, field trips dates will be announced throughout the semester. ***For your planning purposes, once a week field trips to various locations will be the standard, plan for this***. Due to COVID protocols for SPRING 2021, personal transportation will be required for all field trips. Be prepared to drive, carpool or get a ride to the field trip location. School transportation will not be provided.

**Grading Policy and Certificates**:

To receive a certificate of successful completion for NWCG Course work a student must pass all unit exams with a satisfactory score (specified for each unit). Final exam passing grade for NWCG & FEMA courses is 70% (NWCG and FEMA requirement).

# Course Unit Points Available Certificate Acquired

# IS-800 30 Points FEMA, IS-800

# S-133 30 Points NWCG, S-133

# S-212 30 Points NWCG, S-212

# S-211 30 Points NWCG, S-211

# First Aid CPR 30 Points Provider Certificate

Performance Evaluation/Participation 30 Points

Assigned work/quizzes 30 Points

# Mid Term 30 Points

# Final 30 Points

Grading will be based on the results of above-mentioned assessments and Performance evaluation/participation. Assignments must be submitted on the due date or earlier. **Assignments and exam content will be based on lectures, in-class labs, and reading assignments. Your success will be centered around your notetaking from in class lectures, labs and readings. Always have something to write with and always take notes!!!!**

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| **Grade Distribution** |
| A =  | 90-100% |
| B =  | 80-89% |
| C = | 70-79% |
| D =  | 60-69% |
| F =  | Below 60% |

**Student Required PPE for Field Activities and general course activities:**

**NR-97-Wildand Fire School Fundamentals**

*Each student must have the following items during each class in order to be allowed to participate and earn credit for field trip.*

- Hardhat

- Crew Shirt, Sweatshirt and Hat (minimum of 1 each)

- Leather Gloves

- Water container (6-1-quart canteens or water bottles)

- Leather Boots (minimum 8” high uppers, nonskid soles preferably Vibram, no steel) (estimate $200)

- Nomex Fire Pants

- Nomex Fire Shirt

- Leather Belt

- Watch

- Notepad-small (Must fit into cargo pocket)

- Always have a Something to write with (2 regular pens and 1 sharpie)

- Notebook for organizing your class materials.

- Lighter

- Backpack sufficient to carry hardhat, gloves, safety glasses, water, and food (needs to be in addition to your regular school backpack). Chest and waist straps are advisable.

\*\*\* Details will be given during the first-class meeting\*\*\*

**Behavioral Standard Operating Procedures:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Respect and Common Courtesies:*** Students and teachers greatly appreciate attention to appropriate classroom courtesy. Please take care of personal needs (e.g., using the restroom, getting a drink, sharpening a pencil) before class begins. Foul language or disruption to the instruction will not be tolerated. All class attendees will treat and be treated with respect or will be asked to leave the class by the instructor. There will be no tobacco use in any building or campus area.

***Attendance and Punctuality:***I start class on time and take roll. Please do not be late. If you are late, it is your responsibility to ensure that you are counted for attendance **after** class. To be considered present, students should be in class, attentive, properly attired, and ready for classroom or field activities regardless of weather or other factors. ***Two tardies will count as one absence.* *Roll will be taken at each session and students will be dropped if two absences are accrued unless specific arrangements are made.*** Field trips/exercises missed cannot be made up.

Because the job of a Wildland Firefighter is inherently risky, you are expected to put forth nothing less than complete focus and participation while you are in this class. As your instructor, I cannot permit distractions that takes focus away from the rest of the class as the concepts that we cover may one day keep you or others safe on the fireline. I will not allow any interruptions that take away learning opportunities from others. Students are allowed to miss only 10 hours of class *(equivalent to 2 class sessions plus a cushion)* during the semester including absences and tardies. Any absences beyond 10 hours will be grounds to be dropped from the program. If you have other commitments that may impact your ability to show up on time or will impact your ability to attend class, you may want to enroll at another time.

IF THERE IS ANYTHING I NEED TO KNOW: about your situation that may create challenges for you this semester you need to let me know as soon as possible, that way I can have awareness.

SLEEPING IN CLASS: If you are observed to be sleeping in class you will be excused until you can come back attentive. If you If you are tired while in class you may stand up at your discretion in order to maintain focus. If your tiredness becomes a problem/distraction, the instructor may excuse you for the day and you may be marked absent. Take care of yourself, Treat this class like it is your job and your instructor is your employer.

***Technological Gadgets:*** Please turn off or silence cell phones when entering the class.

PHONE USE WILL NOT BE ALLOWED IN CLASS: If you are observed using your phone during class time you will be asked to leave class, you will be marked as absent and will lose credit for the entire day. Phones will not be out while you are in the class room. All texting and electronic device activities must be done outside of class. You will get breaks on the hour, do what you need to do then outside of the class room. If you expect something to come up during class that requires phone use let me know and I will allow you to use/monitor it at my discretion.

***Assignments:***

WRITING ASSIGNMENTS: Unless directed otherwise, all writing assignments will require that you visit the Writing center in order to receive a full grade.

MODULE TAKE-AWAYS: After each class session you can expect to be required to write down 5 main points that you took away from class.

YOU ARE REQUIRED TO TAKE NOTES, IT WILL BE A PART OF YOUR GRADE: Much of the concepts and information you will be required retain will be passed along through lectures. You must take good notes to ensure that you have the required material for study purposes. If you miss class you will need to find a class mate and obtain the notes for the day you missed. Lecture information will not always be formatted to be posted on canvas.

COMMUNICATION IS REQUIRED: Unless previously arranged with the instructor, if you miss a deadline on an assignment without contacting me ahead of time you will not get an opportunity to make it up, which means you will get a zero. You need to be a responsible adult; this program will not enable irresponsibility.

MISSED EXAM: In the event you are going to miss an exam OR assignment you must:

o Contact me at least 1 day ahead of time to let me know your special situation.

o Notify me ahead of time to not be penalized.

TEAM WORK: The only way we get through this is together. We need to help one another. Work as a team, pick each other up, help one another get through the academic and physical challenges, we need to have regular study groups, hold each other accountable and hold yourself accountable.

PERSONAL GROWTH AND EFFORT: You are here by choice and you are going to do it anyway, might as well do it right. Have some integrity to do the right thing when no is looking. Be responsible for your own learning. Once you have a grip on the concepts help other gain proficiency as well.

READING AND WRITING IS REQUIRED: During this course you should expect to have to communicate through reading, writing and oral briefings.

***Preparedness:***

YOU ARE RESPONSIBLE FOR YOUR LEARNING: If you don’t understand you need to ask. You are here by choice so, strive to do well. If you don’t ask, I cannot help you.

PARTICIPATION GUIDELINES: participation is considered active involvement in all class room or lab activities. Participation requires you to engage in lecture topics. You will be graded on your performance and participation.

CLASS ROOM PREPAREDNESS: You will be docked preparedness/participation points for not having your required materials. You must always bring to class your Lecture/Lab Manuals

* YOU MUST ALWAYS BE PREPARED FOR CLASS:
	+ If you do not have your proper PPE you will be excused from class and will lose credit for the day.
	+ If you do not have your lab manual or notetaking materials you will be considered unprepared, will be excused from class and will lose credit for the day.
* Personal Protective Equipment (PPE) is mandatory for all field exercises. Safety rules must be strictly followed including the use of personal protective equipment (PPE) and cautious behavior. Students who fail to have in possession all PPE for field trip/exercises will not be allowed to participate, will be dismissed from the day’s exercise, and will be charged an absence for the day. ***SEE STUDENT REQUIRED PPE listed items at the end of this document.***
* ***Classroom Visitors:*** It is not acceptable to bring guests to class.
* ***Late Work:*** Work that is turned in late will lose 10% percentage grade points for each class session that is missed. (one class session late = -10% two class sessions late = -20%. Make up work ***will not*** be accepted after 3 missed sessions)
* ***Make-ups:*** Make up work will be accepted at the discretion of the instructor. All make up work must be discussed and approved by the instructor. Do not assume that make up work will be made available to you.
* ***Extra Credit:*** Extra Credit opportunities may be made available throughout the semester. Opportunities will be communicated as they arise.

Course Learning Concepts (Schedules and outlines must remain flexible):

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|  | **TOPIC** | **CONCEPTS** |
| **1** | **Crew/Squad Organization** | * Call Signs
* Chain of command
* Accountability
* Roles and responsibilities
* TEAM BUILDING:
	+ The TEAM and Humility
	+ Followership and Leadership
* ACTION IN THE ABSENCE OF ORDERS.
* Communications and passing messages
 |
| **2** | **Fundamental Rules of Engagement** | * Morning Briefing:
	+ Situation Report
	+ Weather
	+ 6 Minutes for Safety
* Application of 10 Standard Orders
* Application of the 18 watch-outs
* Application of the Downhill line Construction Checklist
* 5 Common Denominators
 |
| **3** | **Radio use** (Bendix King P-150) | * Must always have good communications!
* Line of Sight Channels and Repeater Channels
* Inter-crew Channel
* Understanding of repeater locations and use
* ICS-205 Communication Plan
* Radio ZONES
* Radio Programming
* Radio Cloning
 |
| **4** | **Communications and Briefings** | * Leader’s Intent – **Task**, **Purpose**, **End State**
* What do you expect from others and what others expect from you.
* 5 Communication Responsibilities
* Elements of a briefing
* Listening and receiving a briefing
 |
| **5** | **Portable pumps and Water Use** | * Hose lay/pumping Equipment and deployment proficiency.
* Ultimate goal of the water delivery system
* Efficient pump set up, operation and troubleshooting
* Basic Hydraulic principals
* Developing a good water source.
	+ SNAP TANK
	+ MODIFIED CREEK FLOW
 |
| **6** | **Maps Compass and Land Navigation** | * Understand the mapping systems of a forest / quad map
* Identification of map features, topographic shapes, slope, distance, positioning
* Plotting locations on maps from verbal descriptions.
* Avenza Mapping systems
 |
| **7** | **Fire Weather and Weather Observations** | * Review-belt weather kit
* Predictive Services
* Effects on fire behavior
* Extreme Fire Behavior
 |
| **8** | **Wildfire Suppression Tactics** | * Review Fire behavior descriptions and potential.
* Common suppression difficulties.
	+ Mid Slope lines
	+ Downhill line construction
* Hot Spotting
* Flair up potential
* Bolstering the hand line
* Ridges as advantageous engagement locations
 |
| **9** | **Emergency Medical Planning** |  |
| **10** | **Burn Operations** |  |
| **11** | **Helicopter Transportation** |  |
| **12** | **Case Studies** | * South Canyon Fire-Case Study
* Yarnell Hill Fire-Case Study
* Mann Gulch-Case Study
* Loop Fire-Case Study
* Cramer Fire-Case Study
 |
| **14** | **Incident Action Plan** |  |
| **15** | **Tool Maintenance**  |  |
| **16** | **Chainsaw Proficiency**  | * Fundamental saw maintenance and trouble shooting.
	+ Basic system operating principals
* Size up procedures
	+ Objective, Hazards, Lean, Escape Route, Cut Plan
* Bucking Skills
* Brushing Skills
* Felling Skills
	+ Undercut proficiency
 |
| **17** | **HAZMAT** |  |
| **18** | **FIRST AID/CPR** |  |
| **19** | **A Day in the Life** | * Hotshot Crew
* Engine Crew
 |
| **20** | **THICK SKIN** |  |
| **21** | **NWCG** |  |
|  |  |  |
|  | **MASTERY SKILLS** | * Radio operations and use
* Belt Weather Kits
* Probability of Ignition
* Map and Compass
* Tool Maintenance
* Chainsaw operations
* Chainsaw Maintenance
* 6 minutes for safety
* Hanford Weather
* After Action Reviews
* Progressive hose lays
* Portable pump set ups
* Briefings
* Helicopter Loading
* Line Construction and Trenching
* Medical Scenario planning
* Downhill Line Construction
 |

NR-5 Course Schedule

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| --- | --- | --- |
| **7** | **Fire Weather and Weather Observations** | * Review-belt weather kit
* Predictive Services
* Effects on fire behavior
* Extreme Fire Behavior
 |
| **8** | **Wildfire Suppression Tactics** | * Review Fire behavior descriptions and potential.
* Common suppression difficulties.
	+ Mid Slope lines
	+ Downhill line construction
* Hot Spotting
* Flair up potential
* Bolstering the hand line
* Ridges as advantageous engagement locations
 |
| **9** | **Emergency Medical Planning** | * Planning for bad outcomes
* Preparedness and rehearsed
* Effective treatment
* Effective extraction
* The golden hour
* Concise communications
 |
| **10** | **Burn Operations** |  |
| **11** | **Helicopter Transportation** |  |
| **12** | **Case Studies** | * South Canyon Fire-Case Study
* Yarnell Hill Fire-Case Study
* Mann Gulch-Case Study
* Loop Fire-Case Study
* Cramer Fire-Case Study
 |
| **14** | **Incident Action Plan** | * Content and how to use it
 |
| **15** | **Tool Maintenance**  | * Master the fundamentals
 |
| **16** | **Chainsaw Proficiency**  | * Fundamental saw maintenance and trouble shooting.
	+ Basic system operating principals
* Size up procedures
	+ Objective, Hazards, Lean, Escape Route, Cut Plan
* Bucking Skills
* Brushing Skills
* Felling Skills
	+ Undercut proficiency
 |
| **17** | **HAZMAT - TBD** | * HAZMAT First Responder Operations
 |
| **18** | **FIRST AID/CPR – FEB-8th & 9th**  | * Basic First Aid Treatment
 |
| **19** | **A Day in the Life** | * Hotshot Crew
* Engine Crew
 |
| **20** | **THICK SKIN** | * Work culture preparedness
 |
| **21** | **NWCG** | * Organizational guidance, consistency, qualifications
 |
|  | **MASTERY SKILLS*** Radio operations and use
* Belt Weather Kits
* Probability of Ignition
* Map and Compass
* Tool Maintenance
* Chainsaw operations
* Chainsaw Maintenance
* After Action Reviews
 | **MASTERY SKILLS*** Progressive hose lays
* Portable pump set ups
* Briefings
* Helicopter Loading
* Line Construction and Trenching
* Medical Scenario planning
* Downhill Line Construction
* 6 minutes for safety
* Hanford Weather
 |