

## **Syllabus (Fall 2025)**

### **Prescribed Fire Practicum**

**Course Number:** FOR 452/552

**Credits:** 3

**Fee:** \$33

**Instructor:**

John Punches. Associate Professor, Forest Engineering, Resources and Management. Extension Forester for Northeastern Oregon (Union, Umatilla, and Wallowa Counties). [john.punches@oregonstate.edu](mailto:john.punches@oregonstate.edu)

**Room Locations and times:**

- Zoom Discussions. Tuesdays. 6:00 to 7:20 p.m. Link provided to registered students.
- Lab/Field. Selected Fridays (Sep 26, Oct 3, Oct 17, Oct 31, Nov 7, Nov 21). 2:00 to 4:50 p.m. PFSC 215.
- Burn Experience. Saturday/Sunday, Oct 4-5, 11-12, or 18-19, 8:00 a.m. to 4:50 p.m. (Hold all three of these dates – we will burn on the first day with acceptable weather and fuel conditions.) Meet at west entrance to Richardson Hall. ***Note that the meeting times may be adjusted to accommodate burn schedule and travel time.***
- Other burn opportunities may be available on weekdays. I'll set up a calendar of your availability and inform you if burns are anticipated.

**Students:** This course is open to upper level (junior and senior) undergraduate and graduate students. Students from any college or discipline are welcome.

**Description:** Explores prescribed fire in an ecological context and as a management tool. Emphasizes evaluating sites for prescribed fire potential/suitability, developing burn prescriptions and burn plans to meet landowner and ecological objectives, monitoring results, and accessing resources and expertise. Develops a burn plan and implements a prescribed burn.

**Time commitment:** Approximately 60 hours of instruction and field/lab participation. (Graduate students complete an additional 10 or more hours for writing assignment.)

**Prerequisites:** Must hold Firefighter Type 2 (basic wildland firefighter) qualifications (e.g., FOR 251 Wildland Fire Guard School), or higher.

**Transportation:** Transportation to and from field sites will be provided. Students who are approved as drivers by OSU may be asked to drive an OSU-provided vehicle to transport peers.

**Clothing and Equipment:** Students must provide their own rugged clothing and footwear for their use during field-based activities. OSU will provide wildland fire personal protective clothing/equipment for student use. See details at: <https://blogs.oregonstate.edu/rxpracticum/what-to-bring/>

**Student Learning Outcomes:**

- Synthesize prescribed fire objectives that address landowner goals and appropriately consider the burn area's ecological context.
- Analyze potential fire behavior through modeling, observation, and case studies to inform prescribed fire prescriptions.
- Apply critical thinking skills to plan for burn containment/holding, ignition processes/techniques, resource allocation and management, safety, smoke mitigation, and contingency.
- Assess prescribed burn outcomes to determine secondary fire effects and develop and implement short-term and long-term monitoring protocols.
- Conduct prescribed burn complexity analyses that consider social, ecological, technical, and other factors, and mitigate identified issues through the burn plan.

**Textbooks:** None.

**Required Learning Resources:**

- Behave Plus 6.0 Surface Fire 2021 (<https://wildlandfirelearningportal.net>)
- Behave Plus 6.0 for Prescribed Fire 2021 (<https://wildlandfirelearningportal.net>)
- Prescribed Fire Plan Template (provided by instructor)
- NWCG Standards for Prescribed Fire Planning and Implementation. PMS 484.  
<https://www.nwcg.gov/publications/484>
- NWCG Prescribed Fire Plan Template. PMS 484-1. <https://www.nwcg.gov/publications/484-1>
- NWCG Prescribed Fire Complexity Rating System. PMS 424.  
<https://www.nwcg.gov/publications/424>
- NWCG Prescribed Fire Summary and Final Complexity Worksheet. PMS 424-1.  
<https://www.nwcg.gov/publications/424-1>

**Assignments:**

- **Undergraduate Students:** Required assignments include participation in classroom sessions, active engagement in field and lab exercises, demonstration of skills during the burn exercise, and development of a well-crafted burn plan. Students work as small groups to develop their burn plans iteratively as concepts are developed during the term.
- **Graduate Students:** Graduate students will be responsible for all undergraduate FOR 452 activities (noted above) and will be additionally responsible for completing and submitting a report on the ecological implications of prescribed fire, and implications for prescribed fire application, for a specific geographic area or forest type (to be determined in consultation with the instructor). The report will be a minimum of 5-pages, single-spaced (excluding space for graphics, citations, etc.) following a specified rubric and instructions. The report will require the critique, synthesis, and extrapolation of peer-reviewed journal data related to the subjects and our course topics.

## Schedule

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| <b>Sep 26 (Fri)</b><br><b>2:00 to 4:50 p.m.</b><br><b>Classroom: Peavy 215</b>                    | <b>Course Introduction</b> <ul style="list-style-type: none"> <li>• Course logistics and schedule, expectations</li> <li>• Rx burn plan overview</li> <li>• PPE checkout</li> </ul>  |
| <b>Sep 30 (Tues)</b><br><b>6:00 to 7:20 p.m.</b><br><b>Zoom</b>                                   | <b>Rx Burn Fire Effects</b> <ul style="list-style-type: none"> <li>• Fire effects</li> <li>• Fuel reduction and ecological burn objectives</li> <li>• Assignment: Review recorded lectures on prescribed fire organization, firing practices, holding practices</li> </ul> |
| <b>Oct 3 (Fri)</b><br><b>2:00 to 4:50 p.m.</b><br><b>Classroom: Peavy 215 then to Field Site</b>  | <b>Rx Unit Preparation and Planning</b> <ul style="list-style-type: none"> <li>• Burn unit evaluation and pre-burn mitigations</li> <li>• Fire containment principles and practices</li> <li>• Ignition options and procedures</li> </ul>                                  |
| <b>Oct 4-5* (Sat-Sun)</b><br><b>Field: 8:00 a.m. to 5:00 p.m.</b>                                 | <b>Possible Rx Burn Days</b>   |
| <b>Oct 7 (Tue)</b><br><b>6:00 to 7:20 p.m.</b><br><b>Zoom</b>                                     | <b>Accessing and Using Weather Data</b> <ul style="list-style-type: none"> <li>• Published weather data sources</li> <li>• SPOT weather forecasts</li> <li>• Wind speed types and adjustments</li> </ul>   |
| <b>Oct 11-12* (Sat-Sun)</b><br><b>Field: 8:00 a.m. to 5:00 p.m.</b>                               | <b>Possible Rx Burn Days</b>   |
| <b>Oct 14 (Tue)</b><br><b>6:00 to 7:20 p.m.</b><br><b>Zoom</b>                                    | <b>Unit Layout and Mapping</b> <ul style="list-style-type: none"> <li>• Unit shape considerations</li> <li>• Control line considerations</li> <li>• Mapping conventions</li> </ul>   |
| <b>Oct 17 (Fri)</b><br><b>2:00 to 4:50 p.m.</b><br><b>Classroom: Peavy 215 then to Field Site</b> | <b>Field Measurements</b> <ul style="list-style-type: none"> <li>• On-site weather measurements</li> <li>• Fuel moisture</li> <li>• Fuel load</li> </ul>   |
| <b>Oct 18-19* (Sat-Sun)</b><br><b>Field: 8:00 a.m. to 5:00 p.m.</b>                               | <b>Possible Rx Burn Days</b>   |
| <b>Oct 21 (Tue)</b><br><b>6:00 to 7:20 p.m.</b><br><b>Zoom</b>                                    | <b>Smoke Regulations and Mitigation</b> <ul style="list-style-type: none"> <li>• National air quality implications</li> <li>• Oregon air quality implications</li> <li>• Reducing smoke impacts</li> <li>• Registration requirements</li> </ul>                            |
| <b>Oct 28 (Tue)</b><br><b>6:00 to 7:20 p.m.</b><br><b>Zoom</b>                                    | <b>Intro to RX Fire Behavior Modeling</b> <ul style="list-style-type: none"> <li>• Fuel models</li> <li>• Behave</li> </ul>  |
| <b>Oct 31 (Fri)</b><br><b>2:00 to 4:50 p.m.</b><br><b>Classroom: Peavy 215 then to Field Site</b> | <b>Fire Behavior Modeling</b> <ul style="list-style-type: none"> <li>• Modeling for desired burn effects</li> <li>• Modeling for containment resources</li> </ul>  |

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| Nov 4 (Tue)<br>6:00 to 7:20 p.m.<br>Zoom                  | <b>Developing Prescriptions</b> <ul style="list-style-type: none"> <li>Identifying acceptable parameter ranges</li> <li>Wind speed and direction considerations</li> <li>Effective guidance for implementors</li> </ul>               |
| Nov 7 (Fri)<br>2:00 to 4:50 p.m.<br>Classroom: Peavy 215  | <b>Prescriptions Lab</b> <ul style="list-style-type: none"> <li>Parameters</li> <li>Smoke implications</li> <li>Firing and holding plans</li> </ul>   |
| Nov 11 (Tue)<br>6:00 to 7:20 p.m.<br>Zoom                 | <b>Complexity Analysis</b> <ul style="list-style-type: none"> <li>Analysis tools</li> <li>Applying analysis outcomes</li> </ul>   |
| Nov 18 (Tue)<br>6:00 to 7:20 p.m.<br>Zoom                 | <b>Regulations</b> <ul style="list-style-type: none"> <li>State regulations impacting Rx fire</li> <li>Implications of Rx fire escape</li> </ul>  |
| Nov 21 (Fri)<br>2:00 to 4:50 p.m.<br>Classroom: Peavy 215 | <b>Burn Plan Presentations</b> <ul style="list-style-type: none"> <li>Students present burn plans and receive feedback from instructor and peers</li> <li>Assignment: revise burn plans accordingly and turn in as "final"</li> </ul> |
| Nov 25 (Tue)<br>6:00 to 7:20 p.m.<br>Zoom                 | <b>Pile Burns</b> <ul style="list-style-type: none"> <li>Construction</li> <li>Ignitions and holding</li> </ul>   |
| Dec 2 (Tue)<br>6:00 to 7:20 p.m.<br>Zoom                  | <b>Monitoring Considerations</b> <ul style="list-style-type: none"> <li>Determining what to monitor</li> <li>Effective monitoring practices</li> </ul>  |
| Dec 8-12  | <b>Finals week</b> <ul style="list-style-type: none"> <li>Final version of burn plan due Tuesday, early submission allowed</li> <li>Grad student paper due Tuesday, early submission allowed</li> </ul>                               |

***\*Hold all three of these possible prescribed burn dates on your calendar. Prescribed burning is weather dependent, so we can't perfectly predict when we'll be able to burn. The intent is to embed with the US Forest Service, Deschutes National Forest, on one or more of their burns in Central Oregon. Count on travel time before and after the posted class time. If the weather doesn't cooperate I'll offer alternative learning opportunities that will simulate the burn experience to the extent feasible.***

## Course Policies

### Academic Calendar Considerations/Requirements

All students are subject to the registration and refund deadlines as stated in the Academic Calendar:  
<https://registrar.oregonstate.edu/osu-academic-calendar>

### Class Attendance and Participation

Students are expected to attend Zoom and classroom/lab sessions and actively contribute to discussions. Participation in prescribe burn is required.

## Evaluation of Student Performance

- **Undergraduate (FOR452) Students:** Required assignments include participation in Zoom sessions (200 points), active engagement in field and lab exercises (200 points), demonstration of skills during the burn exercise (200 points), and development of a well-crafted burn plan (400 points).
- **Graduate (FOR552) Students: Requirements include** all undergraduate FOR 452 activities (noted above) plus development and submittal of a report (worth 250 points) on the fire ecology of a geographic area or forest type (to be determined in consultation with the instructor), plus assistance with course logistics (driving, attendance, PPE distribution, etc.).

Grading scale: A = 100-93%, A- = 92-90, B+ = 89-88, B = 87-83%, B- = 82-80, C+ = 79-78, C = 77-73%, C- = 72-70, D+ = 69-68, D = 67-63%, D- = 62-60, F = below 60%.

Extra credit assignments may be made available at the discretion of the instructor.

## Late Work/Exam Policy

Students who require additional time to complete assignments may request an extension of deadline(s) by contacting the course instructor. Extensions will be granted only for situations such as health or family-related emergency, job-related scheduling conflicts unavoidable to the student, or other situations beyond the student's control. Requests for extensions must be made in advance of the assignment/exam due date (24 hours advance notice where feasible). Work turned in late without prior approval shall be subject to a penalty of 5% of the assignment's total points per day (or any part thereof), up to a maximum deduction of 40% of the total possible points.

Students who are unable to participate in a graded Zoom session (for one of the reasons noted above) should notify the instructor in advance (as above) and arrange to make up the missed sessions.

## Incompletes

Incomplete (I) grades will be granted only in emergency cases (e.g., a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the assigned work. If you are having any difficulty that might prevent you from completing the coursework, please don't wait until the end of the term; let me know right away.

## Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

## Student Conduct

Students in this course will be expected to conduct themselves in a professional manner. You will be expected to treat other students, instructors, and guest lecturers with dignity and respect, and follow

university guidelines regarding academic honesty, student conduct, and civility. Behaviors that are disruptive to teaching and learning will not be tolerated and will be referred for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office. The student code of conduct can be reviewed here: <https://beav.es/codeofconduct>. The Office of Student Life, <https://studentlife.oregonstate.edu/>, provides extensive resources and support for navigating your time as a student at Oregon State University.

### **Student Bill of Rights**

OSU has twelve established student rights. They include due process in all university disciplinary processes, an equal opportunity to learn, and grading in accordance with the course syllabus: <https://asosu.oregonstate.edu/advocacy/rights>

### **Reach Out for Success**

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success at <https://oregonstate.edu/ReachOut>. If you are in immediate crisis, please call or text the Suicide & Crisis Lifeline at 988.

### **Student Learning Experience Survey**

During Fall, Winter, and Spring term, the online Student Learning Experience surveys open to students the Wednesday of week 9 and close the Sunday before Finals Week. Students will receive notification, instructions, and the link through their ONID email. They may also log into the survey via MyOregonState or directly at <https://beav.es/Student-Learning-Survey>. Survey results are extremely important and are used to help improve courses and the learning experience of future students. Responses are anonymous (unless a student chooses to "sign" their comments, agreeing to relinquish anonymity of written comments) and are not available to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.