

## **Fire Science and Society** Fall 2013



**Course Description:** *Fire Science and Society* is a 4 credit MES program elective offered Fall 2013. Fire has played the role of ecosystem engineer in forests and grasslands throughout the world. This role has changed over the past hundred years, however, with increasing human populations, sprawling development into fire-prone areas, and altered perceptions of this vital ecological process. With fire suppression and exclusion, we are seeing dramatic changes in the structure and functioning of fire-influenced ecosystems and the role of fire in natural resources management and policy. There are significant ecological, social and political implications of these changes, ranging from the listing of fire-adapted endangered species to more rigorous air quality regulations to altered pressures and priorities for the timber industry. Adapting policies in the anticipation to climate change has become a major priority. It is becoming more important for citizens to understand both the benefits and the risks associated with fire as it is increasingly impacting people in their daily lives. This course will introduce students to the language, the ecology and the politics surrounding wildland fire and increase your effectiveness with opportunities that involve fire science, application and management.

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**Class resources via moodle Website:** <http://www2.evergreen.edu/moodle/> under *Fire Science and Society*. PDF versions of class materials, including presentations, articles, etc. will be posted on the website. There is one text to purchase: *Living with Fire: Fire ecology and policy for the 21<sup>st</sup> century*, 2008 by Sara E. Jensen and Guy R. McPherson

### **Class Meetings:**

**Lectures: Monday evenings from 6pm to 10pm** SEM 2 Room D2109

### **Class schedule for the first 3 weeks:**

Week 1 Monday September 30 **Class 6pm**

Week 2 Monday October 7 **Class 6pm**

Week 3 October 11-13 Friday 6am- Sunday 3pm, camping in the Wenatchee area

### **Be prepared for field work on field trips:**

This class emphasizes field-based, hands-on experience with forest ecology and ecosystem analysis, which requires traveling off trail in potentially rough conditions. You need to be properly attired and have the proper equipment. Please come prepared for spending the day in the forest. This includes wearing sturdy shoes and long pants (shorts and sandals stay in the van), maintaining your metabolism (food and water), and protecting yourself from the environment (rain gear, sun protection, warm clothes, etc.). Please care for yourself and know your limits in all weather. Safety on field trips is a shared responsibility. Take it seriously. Each field trip will begin with a safety briefing.

**ATTENDANCE/CREDIT:**

Attendance at lectures, discussions, and field trips is REQUIRED. Absence from class without alternate arrangements is noted in evaluations. If you miss  $\geq 10$  hours of class time without prior arrangements you will lose credit.

**ASSIGNMENTS/EVALUATION:** We will use four areas to evaluate your progress toward course goals: participation in lectures and discussion, presentations to the class, and participation in seminars will help you synthesize salient information and provide practice speaking in a safe environment.

1 **Participation and contribution to the class:** Each of us brings something to the class, whether it is information, experience, insights or thoughtful questions. During class each student will be responsible for reporting to class material from the text and primary literature relating to fire as natural resources managers. Make the best contribution you can. Remain objective.

2 **Class notes:** Record keeping and faithful recollection are valued skills. Note taking and effective written summaries are skills that need to be developed and maintained. Taking good class notes that are of value to you is a good way to hone those skills. Yes, this includes the field trips. A review of your class notes will be part of the evaluation conference process.

3 **Independent field project:** It is important to understand how field techniques are used to answer questions related to fire ecology. You will have the opportunity to conduct a small independent field project while on our field trip. A report of your project will be evaluated.

4 **Final presentation and paper:** Oral presentation and supporting final literature review on a topic of your choice relating to fire ecology, history or policy.

## CLASS SCHEDULE

Week/lecture subject	Readings/ Activities	Possible class activities	Class hours
<b>Preparatory reading for Week 1</b>	Assignment: Read Living with Fire Chapter 1; Keeley 2009; Pyke et al. 2010		
<b>Week 1 – Sept 30</b> Class expectations; Introduction to fire regimes and fire terminology, global influence of fire	Assignment: Read Living with Fire Chapter 2; Stephens and Ruth 2005;	Hour 1- Class expectations (R&S) Hour 2- Fire regimes and terminology (S) Hour 3- Global influence of fire (R) Hour 4- Discuss readings, how to summarize readings, field trip prep (R&S)	4
<b>Week 2 – Oct 7</b> Forest ecosystems and fire regimes in WA;  <b>Oct 11-13: Field trip to Wenatchee</b>	Assignment: Read Living with Fire Chapter 3; selected articles from Fire Management from 1938, 1984, 2012; Hessburg et al. 2005	Hour 1&2 –Forest ecosystems, classification, species and ecology (R) Hour 3&4 - field trip prep (R&S)  Eastern Washington field trip <b>Friday:</b> Discuss fire planning with US forest Service and community, Camp by Leavenworth <b>Saturday:</b> Explore wildfire impacts on landscape and community, conduct independent projects; Camp by Leavenworth <b>Sunday:</b> Head back with a few stops along the way	4 18
<b>Week 3 – Oct 14</b> NO CLASS	Assignment: 2-3 page summary of field project from trip Read Noss et al. 2006, Halofsky et al. 2011		0
<b>Week 4 - Oct 21</b> Mixed fire regimes  DUE: Field trip project report	Assignment: Read Living with Fire Chapter 4; Ryan et al. 2013; Vogel et al. 2010	Hour 1 – <b>Guest speaker - Mixed fire regimes</b> Hour 2 – Literature review and presentation prep time	2
<b>Week 5 – Oct 28</b> Using Rx fire to meet ecological objectives; Fire history and policy in American West	Assignment: Read DeLuca and Aplet 2008; Hurteau and Brooks 2011 Literature Review topic	Hour 1&2- <b>Guest speaker – Using Rx fire to meet ecological objectives</b> Hour 3-Fire history and policy in American west (S) Hour 4-Discussion	3.5

<b>Week 6 – Nov 4</b> <i>Fire effects on soils</i> DUE: Lit review topic	Read Living with Fire Chapter 5. Engstrom 2010 Literature Review outline	Hour 1- Fire and soils (S) Hour 2- Fire and C budgets (R&S)	3
<b>Week 7- Nov 11 (holiday)</b> <b>No class</b> DUE: Lit review outline	Assignment: Read Living with Fire Chapter 6, Yoder et al. 2004, Diaz 2012		
<b>Week 8 – Nov 18</b> Regulatory and human health issues surrounding fire and smoke in Washington	Assignment: work on presentations and literature reviews	Hour 1- <b>Guest speaker- Smoke effects on human communities</b> Hour 2 – Discussion about readings Hour 3 – Pop quiz and individual paper check-ins	3.5
<b>Week – Nov 25 (holiday)</b> <b>No class</b>		NO CLASS	0
<b>Week 9 – Dec 2</b> Final student presentations DUE: Literature Review		7-8 student presentations	3
<b>Week 10 - Dec 9</b> Final student presentations		7-8 student presentations	3
<b>Eval Week – Dec 16-21</b>	Evaluation conferences will include a short written self and faculty evaluation		Total hours 44