# Advanced Silviculture FRST 507c – 3 credits

*Wednesdays starting January 3, 2018, from 9:30 am to 12 noon, in FSC 2430*

This course focuses on stand dynamics and silvicultural systems. Stand dynamics is the study of changes in stand structure with time, including stand behavior during and after disturbances. Silvicultural systems are planned programs of treatments designed to achieve stand conditions that will meet site-level objectives over the life of the stand, including all phases from harvest to regrowth to harvest.

## Learning Objectives

By the end of this course students will understand:

* the history of stand dynamics, core and integrating concepts;
* tree and stand growth requirements, development, and response to disturbance;
* the application of stand dynamics concepts within the framework of silviculture systems
* challenges and opportunities of implementing classical and new silviculture systems;
* some contemporary silviculture issues and challenges.

## Grading

Seminar (with partner, due Feb 28-Mar 28) 30%

Individual term paper (draft due Mar 28, final due Apr 15) 60%

General preparation and participation 10%

## Seminar

With a partner identify a topic in contemporary silviculture and sign-up for a seminar date, post a pre-reading for your classmates at least 1 week before your seminar, prepare a 20 minute presentation on this topic and then lead a 30 minute class discussion of the topic grounded in your presentation and the pre-reading. Grades will reflect the relevance of the topic, the quality of the research and presentation, the creativity and enthusiasm of the class discussion session.

## Term Paper

Individually, take the topic from your seminar and expand it into a professional paper which investigates the history and context of your chosen topic, contemporary issues pertaining to it, and responses to these issues looking forward. The paper should start by defining the problem or issue, review relevant literature, discuss the issues raised in the literature, make a series of recommendations and arrive at some conclusions. A minimum of 15 primary sources should be reviewed. There will be several milestone submissions during term, including topic and problem statement, outline, draft and final report.

## Schedule and Readings

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| **Date** | **Lecture hour 1** | **Lecture hour 2** | **Readings** |
| Jan 3 (Steve and Deb) | Course Introduction, Tree Architecture | Plant interactions and growth | Oliver and Larson Ch 1 - 3 |
| Jan 10 (Bruce) | History of Stand Dynamics, Integrating concepts | Disturbance and Tree invasion | Oliver and Larson Ch 4 - 6 |
| Jan 17 (Steve) | Stand Initiation Stage | Stem Exclusion Stage | Oliver and Larson Ch 7 - 9 |
| ***Jan 24*** | ***No Class – FRST 558 Site Visits*** | | |
| Jan 31 (Deb) | Understory Re-initiation Stage | Old-Growth Stage | Oliver and Larson Ch 10 - 11 |
| Feb 7 (Deb and Steve) | Red alder chronosequence walk and exercise | Walk continued… |  |
| Feb 14 (Steve) | Silv Systems –Selection Systems | Single Tree Selection Case studies | Oliver and Larson Ch 12- 14  BCTS Silv Systems Manual Part 1, 2 & 4 |
| ***Feb 21*** | ***No Class - Reading Week*** | | |
| Feb 28 (Steve) | Shelterwood System | Student Seminars 1 and 2 | See course website |
| Mar 7 (Deb) | Seed Tree System, Stratified Mixes | Student Seminars 3 and 4 | See course website  (\* check on-line calendar for date and time) |
| Mar 14 (Steve) | Retention System, EBM | Student Seminars 5 and 6 | Oliver and Larson Ch 15 – 16  See course website |
| Mar 21 (Deb and Steve) | It’s Spring in the Woods walk | Walk continued… |  |
| Mar 28 (Steve and Deb) | Student Seminars 7 and 8 | Course Wrap-up | See course website  Draft term papers due |
| ***Apr 4*** | ***No Class – Individual meetings with Deb or Steve re draft term papers*** | | |
| ***April 15*** | ***Individual Term Papers Due*** | | |