Integrated Field Practicum

4 credits
Instructor: Linda Nagel
Office Location: MTU campus, Horner Hall #170
Telephone: 487-2812
Email: lmnagel@mtu.edu
Office Hours: after class, or by appointment

Course objective: To gain an understanding of how to use silvicultural practices to meet multiple resource management objectives. As a basis for this objective, we will develop a working knowledge of general tree physiology, forest ecology, stand dynamics, ecosystem function, and current management issues to aid in our understanding of basic silvicultural principles. We will see several examples of silvicultural systems throughout the semester.

Pre-requisites: FW2010 Vegetation of North America; FW2050 Measuring Forest Resources
Informal Pre-requisites: FW3020 Forest and Landscape Ecology; MA2720 Statistical Methods

*Additional readings will be handed out during class

Performance goals and expectations: Students enrolled in FW 3010 during Integrated Field Practicum (IFP) will participate in lecture, discussion, individual and group field assignments, and field trips throughout the semester. Some important skills you will acquire include the ability to:
✔ Demonstrate a clear understanding of key ecological concepts related to forest stand development and the response of forest vegetation to silvicultural practices
✔ Demonstrate knowledge and appropriate use of silvicultural terminology, including regeneration techniques, intermediate stand treatments, and silvicultural systems
✔ Demonstrate proper use of the silviculture prescription process
✔ Ability to anticipate how different silvicultural practices might affect soil resources, forest health, wildlife habitat, biological diversity, wood production, water quality and yield, recreation, and aesthetics
✔ Be able to adapt silvicultural systems to apply to different forest ecosystems
✔ An appreciation for the social dimensions of silvicultural planning and the need to adapt silvicultural practices to meet landowner objectives

Points

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<tr>
<th>Points</th>
<th>Assignments</th>
<th>Reports 5 x 10 pts</th>
<th>Quizzes 6 x 20 pts</th>
<th>Final Exam 80 pts</th>
<th>Final Project Written report</th>
<th>Participation/attendance</th>
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<td>50</td>
<td>120</td>
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<td>TOTAL pts</td>
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<td>120</td>
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Grading: A = 92-100%; AB = 86-91%; B = 80-85%; BC = 75-79%; C = 70-74%; CD = 65-69%; D = 60-64%; F < 60%

1 Assignments and points may be added/subtracted throughout the semester
University Policies

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance with the University's policies.

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following:

Michigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office, at 487-2212. For other concerns about discrimination, you may contact your advisor, department head or the Affirmative Action Office, at 487-3310.

Academic Integrity: http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html

Affirmative Action: http://www.admin.mtu.edu/aaio/

Disability Services: http://www.admin.mtu.edu/urel/studenthandbook/student_services.html#disability

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<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Assignments</th>
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<td><strong>Intro to silviculture, silv history, silvicultural systems, issues of scale, silvics, basic tree biology, understory vegetation, site quality (habitat types, site index)</strong>&lt;br&gt;Stand dynamics and disturbance ecology&lt;br&gt;Intro to structural classification and basic stand descriptors (density, structure, species composition, diameter distributions, vertical profiles)</td>
<td>Nyland Chps 1, 2, 3&lt;br&gt;Puettman et al. pp 1-40&lt;br&gt;Barnes et al Chp 13&lt;br&gt;Smith et al Chp 2&lt;br&gt;&lt;strong&gt;Assign 1 (20 pts) ~ Habitat Typing, Structural Classification**</td>
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<td>Tu</td>
<td>Sept 1</td>
<td><strong>Site Index</strong>&lt;br&gt;Tree and forest growth (forest productivity, MAI/PAI)&lt;br&gt;Stand density concepts</td>
<td>Nyland Chp 15&lt;br&gt;Nyland Chp 9, pp 195-212&lt;br&gt;&lt;strong&gt;Assign 2 (10 pts) ~ Site Index**&lt;br&gt;&lt;strong&gt;Assign 3 (15 pts) ~ Density problem-set**&lt;br&gt;QUIZ 1</td>
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<td>Sept 4</td>
<td><strong>Thinning and other intermediate treatments</strong>&lt;br&gt;Pruning&lt;br&gt;Objectives and Prescriptions</td>
<td>Nyland Chps 16, 17, 18, 19&lt;br&gt;O’Hara 2007, Nyland pp 469-482&lt;br&gt;&lt;strong&gt;Assign 4 (15 pts) ~ Thinning**&lt;br&gt;QUIZ 2</td>
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<td>Sept 11</td>
<td><strong>Site Prep</strong>&lt;br&gt;Regeneration principles</td>
<td>Nyland Chp 5&lt;br&gt;Nyland Chps 4, 6, 7, 8&lt;br&gt;&lt;strong&gt;Assign 5 (15 pts) Regen survey**&lt;br&gt;QUIZ 3</td>
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<td>Sept 18</td>
<td><strong>Fieldtrip ~ PORCUPINE MOUNTAIN WILDERNESS STATE PARK</strong></td>
<td>Report 1&lt;br&gt;Frellich Chp 4</td>
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<td>Th</td>
<td>Sept 24</td>
<td><strong>Overview of regeneration techniques</strong>&lt;br&gt;Even-aged, overview&lt;br&gt;Uneven-aged, overview&lt;br&gt;Uneven-aged regulation (including q-factor)</td>
<td>Nyland Chp 9&lt;br&gt;Nyland Chps 13, 14&lt;br&gt;Nyland Chps 10, 11, 12; Kelty et al 2003; O’Hara 2002&lt;br&gt;&lt;strong&gt;Assign 6 (15pts) ~ q-factor**&lt;br&gt;QUIZ 4</td>
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<td>Oct 2</td>
<td><strong>Vegetative reproduction</strong>&lt;br&gt;Genetics&lt;br&gt;FFC Cutting Trial&lt;br&gt;Marking&lt;br&gt;&lt;strong&gt;PM Fieldtrip ~ GREEN TIMBER CONSULTING**</td>
<td>Nyland Chp 24&lt;br&gt;Erickson et al 1990&lt;br&gt;QUIZ 4&lt;br&gt;Report 2</td>
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<td>Oct 12</td>
<td><strong>Fieldtrip ~ PLUM CREEK</strong></td>
<td>Report 3&lt;br&gt;Johnson 1995</td>
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<td>Th-F</td>
<td>Oct 15-16</td>
<td>IFP Project</td>
<td>Part I: Vegetation Assessment</td>
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<td>Oct 23</td>
<td><strong>Fieldtrip ~ HIAWATHA NATIONAL FOREST</strong></td>
<td>Report 4</td>
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<td>Oct 26</td>
<td><strong>Fieldtrip ~ MI DEPARTMENT of NATURAL RESOURCES</strong></td>
<td>Report 5</td>
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<td>M-Th</td>
<td>Nov 2-5</td>
<td>IFP Project</td>
<td>Part II: Prescription Writing</td>
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<td>12</td>
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<td>Nov 13</td>
<td>Managing for wildlife habitat&lt;br&gt;Damage agents&lt;br&gt;Silvicultural impacts on watersheds&lt;br&gt;Landowner objectives and land ethics</td>
<td>Smith et al Chp 20&lt;br&gt;Smith et al Chp 19&lt;br&gt;Hicks 1998&lt;br&gt;&lt;strong&gt;Assign 7 (10 pts) Objectives**&lt;br&gt;QUIZ 5</td>
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<td>Nov 16</td>
<td>Silviculture in the face of an uncertain future climate</td>
<td>Kirilenko and Sedjo 2007; Millar et al 2007; Iversen et al 2008&lt;br&gt;&lt;strong&gt;FINAL EXAM**</td>
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<td>F</td>
<td>Nov 20</td>
<td>PRESENTATIONS</td>
<td>Happy Thanksgiving!</td>
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2 The course schedule and assignments are subject to adjustment as deemed necessary by the instructor.
READINGS (in addition to the Required Text)³

**Week 2**

**Week 3**

**Week 5**

**Week 7**

**Week 9**

**Week 10**

**Week 14**

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³ The reading list is subject to change. Readings will be handed out the class prior to the date they are assigned for.