Course Description:
This course is designed to provide the foundational knowledge and basic skills/ techniques involved in interpreting the natural history of winter and spring environments. This course will cover winter survival of wildlife, tracking, forest ecology, spring migration, & wildflowers.

Goals: This course will help the participants to:
- a. Identify birds and describe their fundamental ecology (such as life history, nesting, feeding, and behavior).
- b. Identify the spring ephemeral wildflowers found in Northern Minnesota using a field guide.
- c. Explain ecological relationships of the winter environment
- d. Observe the transition of winter into spring in the natural environment
- e. Use appropriate interpretive techniques to effectively teach to an audience.
- f. Implement fundamentals of field interpretive methods such as site assessment, lesson plan construction, and use of equipment.

TENTATIVE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignments/homework after class</th>
<th>Location</th>
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</table>
| Jan. 23| • Introductions, background and expectations from the course   
  • Explanation of syllabus: itinerary, coursework, grading, lesson plans
  • Success in this class – note taking.. 
  • What is Winter? 
  • Winter weather | • Before March 1, Go to one of the Planetarium’s Public Program - 7pm on Wednesdays and Fridays. Go to http://www.d.umn.edu/planet/ for topics that match your interest. Write a summary of what you learned. 
  • Read “Becoming Better Interpreters” on Moodle and make comments 
  • Read 1-10 in Life in the Cold 
  • Read January in Backyard Almanac (on website) 
  • Winter bird list – Check off birds that could be seen in our area during the winter – use your field guide to birds. (5 points) | SpHC 9                  |
| Jan. 30| • SNOW interpretation: snow as weather & snow dynamics 
  • Intro to winter birds at the bird feeding station | • Read 11-39 in Life in the Cold 
  • Read Snow chapter in Nature in Winter (website) | Bagley Nature Area      |
| Feb. 6 | • Intro to Tracks and Tracking 
  • Night sky projects assigned | • Read first 2 weeks of February in Backyard Almanac (on website) | Bagley Nature Area      |
| Feb. 13| • Animal survival in winter                                         | • Work on Night Sky lesson plan                                                                   | Bagley Nature Area      |
| Feb. 20| • Plant survival in winter                                          | • Last 2 weeks of February in Backyard Almanac 
  • Winter tree id 
  • Night sky lesson plan rough draft due | Bagley Nature Area |
| Feb. 27| • Tracking II – Stories in the Snow 
  • Winter Tree Identification II | • Read Tracking Stories on Moodle & respond to question 
  • People and Forests – view this video by March 30 | Hartley Nat. Area 
  Hartley/ Woodhaven Rd Entr. |
<p>| March 6| • NIGHT SKY TEACHING! 6:00-9:30 PM – turn in final lesson plan       |                                                                                                  | Hartley Nat. Area Hartley/ Woodhaven Rd Entr. |
| March 13| • Plot study - set up and procedure                                  | • Select your plot site and begin initial inventory                                               | Bagley Nature Area      |</p>
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<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>March 20</td>
<td>Spring Break!</td>
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<td>March 27</td>
<td>• Traditional Sugarbush&lt;br&gt;• Turn in your Plot study location – written description &amp; detailed map&lt;br&gt;• Bird research assigned</td>
<td>Bagley Nature Area</td>
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<td>• Reading: Sugarbush (website)</td>
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<td>April 3</td>
<td>• Forest Management – Introduction to Forest Management Practices (John Geissler &amp; Matt Radtzak)&lt;br&gt;• Spring Ecology lesson assignment discussed</td>
<td>Boulder Lake - meet at the van</td>
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<td>• Read “Pieces of Paper Protecting the Land” on the website – Moodle Comments&lt;br&gt;• Finalize your Bird Research Paper&lt;br&gt;• Bird worksheet</td>
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<td>April 10</td>
<td>• Fon du Lac Birding—Spring ornithology&lt;br&gt;• Turn in the Bird Worksheet&lt;br&gt;• Turn in Bird Research Paper&lt;br&gt;• Turn in your Plot Journal</td>
<td>Fon du Lac – meet at the van</td>
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<td>April 12/13</td>
<td>• Crex Meadows Trip - birding, froggin’, spring plants, interpretation&lt;br&gt;• Bird oral presentation while on trip</td>
<td>Crex Meadows Wildlife Area</td>
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<td></td>
<td>• Summary of what you learned on the Crex trip</td>
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<td>April 17</td>
<td>• Reading the Landscape from trees, plants, topography&lt;br&gt;• Hartley Park history&lt;br&gt;• Turn in draft lesson plan</td>
<td>Hartley Nature Area – meet at HNC pkg lot</td>
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<td>• Read “Readin’, ‘Ritin’, and Recess” on Moodle and provide comments</td>
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<td>April 24</td>
<td>• Student Lessons: Spring ecology lessons&lt;br&gt;• Familiarize yourself with the Field Guide to Birds - do worksheet (10 pts)</td>
<td>Bagley Nature Area</td>
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<td>May 1</td>
<td>• Aquatic study – understanding the aquatic environment&lt;br&gt;• Crex Summary Due</td>
<td>Bagley Nature Area</td>
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<td>May 8</td>
<td>• Wildflower I.D. &amp; ecology&lt;br&gt;• Final Plot Journal &amp; reflection due</td>
<td>Magney Snively Park - van to site</td>
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<td>• Final exam review&lt;br&gt;Moodle comments due--most interesting observation from my plot</td>
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<tr>
<td>Finals Week</td>
<td>Final exam</td>
<td>TBA – meet at van</td>
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Books, Supplies, and Fees:

**Required texts:**

**Optional:**

**Supplies:** Students will need to have a pair of binoculars, a hand lens, notebook and proper clothing to go out in all conditions (including rubber boots for exploring wetlands, stream, & pond)

**Fees:** The only additional fees for this class are associated with travel and camping. Food costs will be shared among classmates.

*ALWAYS BRING YOUR FIELD GUIDES, PROPER CLOTHING, AND NOTEBOOK FOR EACH CLASS SESSION*

**Expectations:**
You will be expected to take notes and complete readings to expand your knowledge and understanding so that you can retain information more effectively.
Grading
Attendance is very important. You are responsible for all information given both indoors and outside. Points will be given based on the following criteria:

- For written work, effort and quality are the criteria - all work, other than the Plot and the worksheets, must be typed and follow the given guidelines, must have all components assigned (ie. lesson plans must have each portion), and be well written with appropriate effort.
- For participation, you will be awarded 6 points per class period for which you are fully participating. If you show up unprepared for the conditions or activity (ie. you didn’t bring boots, you forgot binoculars,...), you will lose points for that day. The Crex Meadows trip is worth 60 points.
- For teaching, you will be given points based on 2 things: 1) you do the teaching & 2) you teach what was assigned. Don’t skip a teaching day.
- ALL ASSIGNMENTS MUST BE TURNED IN ON TIME OR YOU WILL LOSE POINTS.

The Work: Points Given:

<table>
<thead>
<tr>
<th>Homework Assignments:</th>
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<tbody>
<tr>
<td>Plot Journal Draft</td>
<td>50</td>
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<tr>
<td>Plot Journal Final</td>
<td>50</td>
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<tr>
<td>Worksheet/write-ups (10 pts ea.)</td>
<td>50</td>
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<tr>
<td>Night Sky Teaching: Lesson plan</td>
<td>25</td>
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<tr>
<td>Teaching</td>
<td>20</td>
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<tr>
<td>Winter/Spring Ecology Teaching: Lesson Plan</td>
<td>25</td>
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<tr>
<td>Teaching</td>
<td>20</td>
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<tr>
<td>Bird research paper</td>
<td>60</td>
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<td>Mid-term Exam</td>
<td>100</td>
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<tr>
<td>Final Exam</td>
<td>100</td>
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<tr>
<td>Class Participation</td>
<td>90</td>
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<tr>
<td>Crex Trip Participation &amp; Summary</td>
<td>60</td>
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<tr>
<td>Moodle Article Comments (15 points each)</td>
<td>60</td>
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<tr>
<td>TOTAL</td>
<td>610</td>
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Grading Based on % of Possible Points:
92% - A
90% - A-
82% - B
80% - B-
72% - C
70% - C-
62% - D

Risk Management
Field experiences are an essential component to the outdoor education process. As we participate in field experiences, we must acknowledge the inherent risk of field program participation. Leaving campus presents risk management concerns including transportation and field site based dangers. In order to avoid problems and strengthen our risk management awareness, it is each student's responsibility to behave in a manner that promotes personal and group safety while in the field. Any questions, concerns, specific medical information, etc. should be directed to the instructor as a part of a shared effort to ensure a safe and optimal learning environment.

ASSIGNMENTS EXPLAINED

Plot Study
The purpose of a Plot Study is for you to explore, in detail, the natural history found in an area that intersects at least one edge between two ecotones (field/woods, grassland/pond, forest/stream, etc.). Through periods of observation, you will gain a greater understanding of the life within this area as it transitions from winter to spring. Details are on a separate sheet.

Lessons
The emphasis in this class is on content, though a portion involves teaching. You will be responsible for being involved in teaching lessons. A lesson plan is due for each of these - turn in just after the lesson is completed.

Night Sky Lesson
You will be assigned a topic related to the winter night sky. This lesson will be 10-15 minutes in length. The goal is to teach peers about the assigned topic. Draft Lesson Plan is due on February 20. Teach on March 6. Turn in Final Lesson Plan.

Spring Ecology Lesson
The purpose of this is to teach peers about late winter/early spring ecology - teach your peers something they probably don’t know. This lesson will be 15 minutes in length and will include a proper introduction, body, and conclusion. You need to make a connection to Bagley, so you must scout the site and be familiar with what you are teaching. You need to make your lesson fun and interactive. The goal is to teach your peers something about winter to spring ecology. Topics will be assigned. Teach on April 24. Turn in draft lesson plan on April 17.

Bird Research Paper
This project is designed to get you to learn more detail of the ecology of birds, particularly those that will be seen while at Crex Meadows Wildlife Refuge. You will present your findings on the Crex Trip. Details will be on a separate sheet.
Crex Meadows Overnight Trip
One of the major ways to understand the natural environment, is to immerse yourself in that environment. This trip is a quick immersion into the world of birds, plants, and interpreting the landscape of the Crex Meadows Wildlife Area near Grantsburg Wisconsin. The focus will be to get into more depth in bird identification, bird ecology, and the ecology of west central Wisconsin/east central Minnesota.

You will be responsible for taking care of your personal camping equipment. The group will work together to take care of group items including: food, tents, cooking equipment, etc. We may be taking a van on this outing.

You will be expected to write up what you learned, as a tool for greater understanding. This summary should be about 2 pages in length and also include your comments on how this information may be useful to you. This summary will be due May 1.

Moodle Assignments
Moodle will be used as a tool to facilitate discussion of readings outside of class time. You will be expected to participate in these discussions. Each assignment will have a reading and then associated questions that are posted on-line. You will need to do 2 things:
1. Post your responses to the questions (5 points)
2. Make comments on two other people’s responses (which means you will need to read other people’s responses to the questions) – this could be an answer to a question they had, an insight based on that person’s comments, helping them identify something, etc. (10 points)

Your responses will be worth 15 points for each article. Take time and put thought into your comments. All comments must be completed by the class period after the reading was assigned.

EXTRA CREDIT You can receive extra credit for participation in activities that complement this course. Each of the below can raise your grade up to 30 points. If you do participate, you will need to summarize what you participated in and what you learned (this should be at least one page long and include activities you participated in and what you learned). These must be completed on or before May 6. Here are the options:
- Participate in a professional conference related to interpretation, outdoor education, or environmental education. Worth up to 30 points. You must fully participate in the conference – don’t just show up for a 1/2 day. Examples include:
  - Student Outdoor Educators Conference
  - Minnesota Science Teachers Association State Conference
  - See Tim’s website for links to other conferences.
- View the videos on the Netsilik Indians – each is worth 10 points – just write a paragraph about what you observed and learned. Available at: http://www.nfb.ca/subjects/inuit/netsilik