2015
FOREST AND NATURAL RESOURCE MANAGEMENT
AUGUST FIELD SESSION

University of Minnesota
College of Food, Agricultural and Natural Resource Sciences
Cloquet Forestry Center
175 University Road
Cloquet, MN  55720-9594

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http://z.umn.edu/augustfieldsession

Program Information:
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Registration Information:
Tracene Marshall 612-625-0266 marsh318@umn.edu 10A Green Hall
**PROGRAM AT THE AUGUST FIELD SESSION**

The August Field Session is a unique opportunity for hands-on learning experiences. During the session students are immersed in the study of plants in forests at the Cloquet Forestry Center and in the surrounding region. Students leave the Twin Cities and the confines of the classroom for the great outdoors. The Forest and Natural Resource Management program is open to any student in any major who meets the prerequisites. **Students register for all of the courses in the program.**

**FOREST AND NATURAL RESOURCE MANAGEMENT PROGRAM**

DATES: arrival Wednesday, August 12; classes begin Thursday, August 13; last day of class Wednesday, September 2; students attend class Saturday, August 15 and 22; no class Saturday, August 29; no classes on Sundays

<p>| Audience | Students registered in this program spend 80 percent of their time in the forests at the Center. They study forest ecology, forest measurements and field botany. This program is required for two tracks within the FNRM major. FNRM majors are strongly encouraged to take the session before their junior year. Students who plan to transfer into the FNRM major as juniors must attend the session the summer preceding their transfer into the College. This applies to students from community, state, and private colleges as well as students from other collegiate units of the University of Minnesota. The August Summer Field Session is a prerequisite for many FNRM courses. Environmental Sciences, Policy and Management (ESPM) and other majors (e.g. Biology, Ecology, Landscape Design) with interests in forest ecology, forest resource assessment, and plant taxonomy are encouraged to register for this program. This program satisfies the ESPM requirement for experience and training in a field setting. For further information, please consult with your academic advisor. |
|---|
| Prerequisites | The following prerequisites are required (RQ) or recommended (RC): |
| | A. GPA of 2.0 or higher (RC); |
| | B. Completion of the following courses, or equivalent, with a grade of C- or better: |
| | 1. Biol 1001, 1009 or equivalent introductory biology course (RQ) |
| | 2. Biol 2022 General Botany (RC) |
| | 3. One semester of chemistry (RC) |
| Courses | FNRM 2101—Identifying Forest Plants (1 cr), P. Splett and A. David, Instructors |
| | Students study the field identification of approximately 120 species of common forest trees, shrubs, and nonwoody vascular plants. Students are introduced to the natural history of selected species. The concepts of plant communities, soil-site relationships, and wildlife values are emphasized. Grading is based on field identification examinations. |</p>
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Instructor(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNRM 2102</td>
<td>Northern Forests Field Ecology (2 cr)</td>
<td>R. Montgomery</td>
<td>This course introduces students to the natural history of forests of the Great Lakes region with respect to soils, ecological characteristics of trees, community-environment relationships, stand development, succession, and regeneration ecology. As a part of this course students work in a variety of pine, boreal and hardwood forest types in and around the Center. Students learn to describe forest communities in terms of soils, microclimate, age, structure, biodiversity, history, productivity, and successional stage. Students may also tour active harvesting operations and/or forest research projects in the region. This course culminates in a group independent research project. Grading is based on written papers, in-class activities and a group oral presentation.</td>
</tr>
<tr>
<td>FNRM 2104</td>
<td>Measuring Forest Resources (1 cr)</td>
<td>T. Burk</td>
<td>This course introduces land survey, tree/forest stand measurement, and forest sampling techniques. It acquaints students with the use and care of selected instruments and introduces them to the measurement techniques used in field forestry and timber cruising. The course is presented under the assumption that the students have had no prior exposure to this phase of forestry, either in the classroom or field. Field exercises are used to teach principles of field measurements and classroom lectures are used only to the extent needed to get students started on fieldwork. Grading is based on student reports on six exercises (overview and DBH measurement, surveying, mapping/aerial photography, height measurement, vegetation sampling with fixed-radius plots, timber sampling with variable-radius plots) and a field final exam.</td>
</tr>
<tr>
<td>FNRM 5161</td>
<td>Northern Forest Field Course (2 cr)</td>
<td>All instructors listed above</td>
<td>Only graduate students are permitted to register for FNRM 5161. This course is equivalent to FNRM 2101, FNRM 2102 and FNRM 2104. This course allows students whose prior background lacks needed exposure to field situations to obtain such experience in an efficient manner.</td>
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</table>
REGISTRATION FOR THE AUGUST FIELD SESSION

Registration is on-line. If you do not fulfill course prerequisites you will need to get a permission number from Dr. Montgomery.

*Students Currently Enrolled in the College of Food, Agricultural and Natural Resource Sciences.*

Registration for this session begins on **March 9** for admitted students. All students should be sure to complete their Fall registration (which begins on March 23) prior to leaving for Cloquet. There is only one week between the end of the summer session and the beginning of Fall Semester.

*Students Not Currently Enrolled in the College of Food, Agricultural and Natural Resource Sciences*

Non-major students may register for the Forest Resources or Graduate Field Session if they have completed the prerequisites, but must obtain permission from Dr. Montgomery.

Non-Degree Seeking students who wish to attend the August Summer Field Session should contact Tracene Marshall at 612-625-0266 or email marsh318@umn.edu.

HEALTH CONSIDERATIONS

The August Summer Field Session involves sustained physical activity. A medical examination prior to the session is advised. Students who are required to complete the field session, but will not be able to do so due to medical reasons, should contact their administrative department head: Dr. Alan Ek (612/624-3400) Department of Forest Resources.

Immunization clearance is not required for the session; however, students attending the session should have had a tetanus booster vaccination within the last five years.

The Center does not stock any medications. If you are susceptible to allergic reactions to pollen, insect bites, stings, etc., **bring your own medication to the session.**

Lyme disease, a tick-borne illness, is present in Northern Minnesota. Students should take precautions to avoid contracting the disease as well as understand symptoms of infection. Most Lyme infections come from nymphal and adult deer ticks. Nymphs are about the size of a poppy seed. Students should dress appropriately to limit tick access to skin, use insect repellent in the field and conduct regular ‘tick checks’ when changing clothes or bathing. Early symptoms may involve fever, headaches and fatigue. In addition, a circular rash often (but not always) develops at the site of the tick bite. Lyme disease is easily treated with antibiotics but left untreated can cause serious, long-term and irreversible health problems (joints, hearth, central nervous system). More information can be found via links on the online version of this document.
TUITION AND FEES INFORMATION

Regular tuition rates and university fees are applied for these courses. You will be charged tuition and fees for 4 credits for undergraduate students and 2 credits for graduate students. You will not be charged a student service fee since the course is held off campus.

Additional Fees (subject to change):

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Hospitalization Insurance – Off-campus course</td>
<td>$160.00</td>
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<tr>
<td>CFANS Collegiate Fee</td>
<td>$  55.00</td>
</tr>
<tr>
<td>Lodging &amp; meals</td>
<td>$640.00</td>
</tr>
<tr>
<td>Field Studies Health Service Fee (graduate students only?)</td>
<td>$  36.00</td>
</tr>
<tr>
<td>Transportation</td>
<td>$160.00</td>
</tr>
<tr>
<td>Equipment/supplies</td>
<td>$  30.00</td>
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</tbody>
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Students without health insurance coverage:

<table>
<thead>
<tr>
<th>Plan</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Health Benefit Plan***</td>
<td>$532.00</td>
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***Students must purchase the Student Health Benefit Plan (SHBP) unless they already have their own insurance coverage. Proof of coverage when registering will exempt you from additional insurance charges. Students currently enrolled in the College of Food, Agricultural and Natural Resource Sciences during Spring semester and on the SHBP are also exempt from purchasing additional insurance. However, you must choose the ‘Purchase University Insurance’ when registering for summer courses. You will not be charged additional costs; this is a bookkeeping step. If you are not already insured, you will automatically be enrolled in the University-sponsored plan (SHBP) if you do not have your own insurance.

A billing statement for tuition and fees will be sent to your student account. These charges must be paid in full by the due date indicated on your billing statement. A late fee will be assessed if payment is not received by that time.

REQUIRED SUPPLIES

Personal items

- Pillow cases, bed linen and blankets must be furnished by students; pillows and mattresses are provided at the station
- Field clothes adequate for protection against cold and rain.
  - waterproof hat, jacket, pants, and waterproofed boots are an absolute necessity because field work is carried out regardless of the weather.
- Any other clothing deemed necessary for a 3.5 week field course
- Toiletries
- Any medications including kits for insect stings, bee stings etc.
FNRM COURSES

The following supplies are not available at the Cloquet Forestry Center. Purchase them before you leave the Twin Cities. Most are available at the Books Underground Bookstore on the St. Paul Campus. For the most part, the expensive items will also be used in other courses and/or in your professional careers.

**FNRM 2101 – Identifying Forest Plants**

- Hand lens – Doublet 10x
- 3 x 5 inch ruled file cards, two packages of 100 each
- These books are helpful but not required.

*Textbook of Dendrology*, Harlow & Harrah  
*Field Guide to Wildflowers*, North Central/NE US, Peterson Guide or similar book or  
*Forest Plants of Central Ontario*, Chambers, Legacy and Bentley  
*Northland Wildflowers*, John & Evelyn Moyle  
*Wetland Plants and Plant Communities*, U.S. Army Corps of Engineers

**FNRM 2102 – Northern Forests Field Ecology**

- Two-inch or 1.5-inch wide, three-ring binder  
- Any books on natural history of Great Lakes ecosystems, field guides or ecology textbooks are helpful but not required.

**FNRM 2104 – Measuring Forest Resources**

- Hand Compass, This is required. Do not come to Cloquet without one.

The compass you bring must be a precision instrument for running land lines. There are three important features to look for when purchasing a hand compass for serious field use. The compass must have (1) a liquid filled housing which dampens the swing of the needle, (2) a mirror cover which enables accurate sighting of lines (without such a cover you will be at a considerable disadvantage in completing the compass related exercises at the session.), and (3) the ability to automatically adjust
for magnetic declination (without this feature you must do the adjustment in your head). We have found that using compasses lacking these features adds significant and undesired confusion to the process of learning compass and pacing/traversing skills. The Silva Ranger and Suunto MC-2 have all three features. We highly recommend either of these two compass types. The Silva Ranger compass has long been popular with foresters and other natural resource professionals.

The Silva and Suunto companies make several models of compasses. You must have the correct model (see model numbers below). The compass may be graduated in either azimuth or quadrants; the azimuth graduation is preferred. A compass is a once in a lifetime purchase that you will use throughout the Cloquet Field Sessions and for your entire career.

Both Silva and Suunto compasses are available at:

<table>
<thead>
<tr>
<th>Ben Meadows Company (1-800-241-6401)</th>
<th>Forestry Suppliers, Inc. (1-800-647-5368)</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.benmeadows.com">www.benmeadows.com</a></td>
<td><a href="http://www.forestry-suppliers.com">www.forestry-suppliers.com</a></td>
</tr>
<tr>
<td>#101924 Silva Ranger (azimuth)</td>
<td>#37036 Silva Ranger (azimuth)</td>
</tr>
<tr>
<td>#213378 Suunto MC-2 (azimuth)</td>
<td>#37185 Suunto Navigator MC2DAZ/IN (azimuth)</td>
</tr>
</tbody>
</table>

All FNRM Courses

- “Rite in the Rain” spiral notebook (field pattern – 64 pages) These notebooks will be available FOR PURCHASE at the Cloquet Forestry Center.
- Clipboard or sheet holder (clipboard with lid or compartment) to protect pages when carrying through the woods to hold 8 1/2 x 11 inch paper.
- Clear plastic bags to protect notes in rainy weather. You will be writing in the rain.
- Pencils and pens for note taking and report writing
- Colored pencils (four colors)
- 8 ½ x 11 inch ruled white composition paper
- 8 ½ x 11 inch University Bookstore No. 4 cross-section paper (20 divisions per inch or equivalent), 15 sheets
- ½ inch ruler marked in inches and tenths
- Insect repellant
- Sun protection
- Dictionary
- Calculator
- Footwear appropriate for walking on uneven ground, through dense brush, and when the soil and vegetation are wet and soggy. You will likely visits some wetlands and bogs so if you own rubber boots bringing them is recommended.
Supplies listed under FNRM 2101, FNRM 2102, and FNRM 2104 apply to FNRM 5161

HOUSING

During the session, students and faculty are housed at the Cloquet Forestry Center. There are several room options including 2-3 person hotel style rooms, 4 person rooms with shared bathroom, and an 8 person dorm with shared bathroom. Camping facilities are not available. Students must live on the Center because it greatly simplifies schedules and group assignments, and provides a better learning experience.

Shared occupancy is required. Pillowcases, bed linen and blankets must be furnished by students; pillows and mattresses are provided at the station. Students are responsible for room clean-up prior to departure at the end of the course.

LOCATION

The August Summer Field Session is held at the University of Minnesota Cloquet Forestry Center in Northern Minnesota. http://cfc.cfans.umn.edu/.
ARRIVAL AND DEPARTURE

Check-in

All students must arrive on Wednesday, August 12, between 2:00 p.m. and 5:00 p.m. Dinner will be served at 5:45 PM with orientation to the session at 7:00 p.m. that same evening in the Auditorium (Building #49). Upon arrival at the station, students should check-in with session staff. Students will be housed on a first come first serve basis. If you want a particular room arrangement plan to arrive earlier rather than later! Park your car in the large visitor parking area behind the administration building.

Class Schedule

Classes begin on Thursday, August 13. Last day of class is Wednesday, September 2 with check-out the morning of Thursday, September 3. In fairness to all students attending the session, requests for early releases to accommodate personal plans will not be approved.

Classes are from 8:00 a.m. to 12:00 p.m. and 1:15-5:15 p.m., Monday through Saturday. There will be no classes on Sundays and one Saturday (August 29) will be free.

Meals

Students are expected to eat their meals in the Dining Hall. The meal schedule is indicated below. The lodging and meals fee covers all meals served; there is no refund for meals missed.

    Monday through Saturday    7:00 a.m.    12:15 p.m.    5:45 p.m.

Saturday evening meals are not provided; no meals are provided on Saturday August 29 or any Sundays. You are encouraged to bring a reusable travel mugs for coffee and beverages to go.

MISCELLANEOUS

Telephone

The Cloquet Forestry Center office number is 218/726-6400. In addition, several courtesy telephones are located throughout the center. In the hallway across from the classroom of the Administration Building, 218/726-6488; in the porch outside of the dining hall, (218/726-6489; and in the kitchen units of cabin #45, 218/726-6492 and cabin #46, 218/726-6493).

Computers

A 24-station computer lab is available to students for class assignments, e-mail, and Internet access via a high-speed line. The computer hard drives are write-protected, so bring a flash drive to save personal files (e.g. reports, assignments, etc.). There will be 60-70 students at the Center
(including FWCB) for part of the Forest and Natural Resource Management session time. Students with laptops may choose to bring them to the session. There is wireless internet access in parts of the station.

Mail

Mail can be sent to the Cloquet Forestry Center using the following address. Mail arrives between 2:00 and 4:00 p.m. daily.

Cloquet Forestry Center  
175 University Road  
Cloquet, MN 55720-9594

Outgoing mail can be placed in a box on the table located outside the office on the upper level of the Administration Building. It must be placed in the box by 4:00 p.m. each day.

Laundry

There are two washing machines and dryers at the station for student use. Two laundromats are located in the City of Cloquet.

Alcoholic Beverages

Absolutely no alcohol is permitted at the Center. Violators will be removed from University housing.

Pets

Pets are not permitted—do not bring pets! This policy is rigidly enforced.

Firearms

The Cloquet Forestry Center is a game refuge. The discharge of firearms is prohibited by state law.