FORS 330 FOREST ECOLOGY
Course Syllabus – SPRING 2016

Instructor:

John Goodburn
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Office: Room 201A Forestry Building
Office hours: Tues. 3:30-5:15 pm, Thur 11:30am – 1:00 pm *(or by advance appointment)*
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Teaching Assistant:

Jacob Powell
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Office: Clapp Building (CHCB) Room 443
Office hours: Friday 11:00 am - 1:00 pm and by appointment.

Meetings:

Lecture and Discussion: Mon. & Wed. 11:10 a.m. -12:00 p.m. Education Bldg. Room 214
Lab/Field Work: Wed. 2:10-5:30pm (HS 207) or Thurs. 2:10-5:30pm (FOR 206)

MOST LAB MEETINGS WILL BE IN THE FIELD AND MEET AT CAMPUS SECURITY (Facilities Services Bldg)
Lab 1st Week will meet INDOORS at respective classroom above
Lab 2nd Week we will meet at Campus Security for Field Lab

E-mail and Moodle will be will be the primary mechanism through which course materials, updates, assignments, news and readings are disseminated.

Course Objectives and Learning Outcomes

Ecology is the study of relationships between organisms and the physical environment, organisms and other organisms, and the cycling of matter and energy.

Forest ecology is concerned with the structure, composition, function and dynamics of forests as three-dimensional ecological systems. In this course, we will focus on factors affecting forest structure and composition, the effects of environmental gradients on plant species distribution, the dynamics of vegetation communities over time, and key ecosystem-level processes such as the cycling of carbon and nutrients.

This course introduces ecological theory and terminology, illustrated with examples from local and regional forest ecosystems. Students will develop their critical analysis ability, and hone the technical communication skills necessary to integrate ecological science into natural resource policies, management plans, and silvicultural and restoration prescriptions.

Students completing the course should be able to:

1. Understand the role of abiotic factors in determining the distribution of species and productivity of forest ecosystems.
2. Develop informed hypotheses about the role of biotic processes in regulation of forest community structure and function.
3. Using measurements of current composition, structure, and abiotic context, describe a forest's past development and disturbances; and speculate about its likely future developmental trajectory, including probable disturbances and their effects.
4. Use field measurements and data analysis to quantitatively describe forest ecosystem conditions and likely ecological factors influencing those conditions.
5. Clearly communicate ecological concepts and ideas verbally and with the written word.

Course Objectives and Learning Outcomes (cont.)

Additional Learning Outcomes for Approved Writing Course

- Use writing to learn and synthesize new concepts
- Formulate and express written opinions and ideas that are developed, logical, and organized
- Compose written documents that are appropriate for a given audience or purpose
- Revise written work based on constructive feedback
- Find, evaluate, and use information effectively and ethically
- Begin to use discipline-specific writing conventions
- Demonstrate appropriate English language usage

Upper-division Writing Requirement in the Major Outcomes

- Identify and pursue more sophisticated questions for academic inquiry
- Find, evaluate, analyze, and synthesize information effectively from diverse sources
- Manage multiple perspectives as appropriate
- Recognize the purposes and needs of discipline-specific audiences and adopt the academic voice necessary for the chosen discipline
- Use multiple drafts, revision, and editing in conducting inquiry and preparing written work
- Follow the conventions of citation, documentation, and formal presentation appropriate to that discipline
- Develop competence in information technology and digital literacy

Readings

Readings will be posted on the course Moodle site. There is no required textbook. Read material before the class or lab for which it is assigned. Be prepared to discuss the reading in lecture and lab sessions. Discussion readings and other recommended readings will be drawn from a few different text books and from a variety of journal articles, news stories, and other sources. Reading material will be available on-line through the Moodle.
The most commonly drawn from text will be:
Forest Ecosystems, 2nd Ed, Perry, D.A., R. Oren, and S.C. Hart 2008.

Labs

* For Field Labs, we will meet to board vans in front of the Campus Security Office just east of the Football Stadium (where campus parking administered). Some labs will be meeting indoors, particularly at the beginning of the semester. Such arrangements will be announced in class. The field lab exercises are considered an essential component of learning forest ecology and integrating various concepts discussed in lectures. Labs are designed to introduce you to many of the key methods used to characterize ecosystem composition, structure, and function.

* Attendance at all scheduled lab sessions is expected, and unexcused absences could negatively affect your grade. Please notify me as soon as possible if you will be unable to attend lab for some reason.
* Unless lab is scheduled to be indoors, always wear appropriate field clothes and footwear (boots) to labs. If rain, sleet, or snow is forecast, bring appropriate gear and do not expect lab to be canceled on account of bad weather.

Class Attendance Policies

(From the UM Catalog: Class Attendance/Absence Policy section in 2015-16 catalog): "Students are expected to attend all class meetings and complete all assignments for courses in which they are enrolled. Instructors may excuse brief and occasional absences for reasons of illness, injury, family emergency, religious observance or participation in a University sponsored activity. (University sponsored activities include for example, field trips, ASUM service, music or drama performances, and intercollegiate athletics.) Instructors shall excuse absences for reasons of military service or mandatory public service."

Class Participation is encouraged and expected. Your preparation and willingness to ask questions and discuss various topics will benefit not only your own learning experience, but also that of your colleagues in the class. Approximately 2% of your course grade will be based on class participation.

Please Drop in or drop me a line. You are encouraged to ask questions and initiate discussions both in and out of class. No need to wait until exam to ask questions! I am available during office hours or other times (by advance appointment) if you cannot meet during posted hours. Please feel free to contact me via email to clarify questions.

Using Email to Contact me works much better for me than office phone, and we can often address questions through addressing your email queries.

Contacting you via your UMONTANA Email Account: In order for me to contact you with any changes in plans or to send files, I will expect that you check your University email account. If you have a preferred email account, such as Gmail, please arrange for any messages sent to your UM account to be forwarded to your preferred account so that you receive all messages that I might send. Thank you, and please let me know if you have any questions/problems with this.

PLANNED GRADING SCHEME*

Assignment	Points	% of Total Grade
Exams		40%
Midterm Performance 1	120 pts	
Midterm Performance 2	120 pts	
Final Performance	160 pts	
Lab Report Assignments &, Related Questions, and Reading Critiques/Questions*	300 pts	30%
Generally Bi-weekly Written Assignments (~8)		
Research Project: Individual Assignments*		18%
Research Topic Outline	10 pts	
Literature Review	150 pts	
Brief (5 min) Presentation of Topic	20 pts	
Research Project: Group Assignments*		10%
Research Topic Worksheet	20 pts	
Research Proposal	80 pts	
Poster Presentation	80 pts	
Class participation	20 pts	2%
TOTAL	**1000 pts**	**100%**

**Further details and Dates to be provided via Moodle*

Grading Option Statement
Please note, this class is offered for traditional letter grade only, it is not offered under the credit/no credit option.

Late Assignments
* Students participating in official University activities (e.g., sports, etc.) will be allowed extensions on assignments with terms established on a case-by-case basis.

** Negotiated excused absences for non-University activities (e.g., family emergency) will be considered on a case-by-case basis. Requests for extensions will only be considered when made at least 1 work day prior to the assignment deadline.

***Unexcused late assignments will be accepted up to a week** (i.e., 5 weekdays, **not** course meetings, and excluding weekends) after the original due date. The overall grade of the assignment will be diminished by 10% for each day late. E.g., the highest possible score for a "perfect" assignment turned in 3 days late would be 70% of the possible points for an on-time assignment. An assignment due Wednesday, but turned in late the following Tuesday is minus 40% before grading (i.e., -10% for each of days late Thurs, Fri, Mon, Tues).

Disability Accommodations
Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications. For more information, visit the UM's Disability Services for Students Office.

Academic Integrity

Plagiarism, cheating, and other misconduct are serious violations of your contract as a student. We expect that you will know and follow the University's policies on cheating and plagiarism. Any suspected cases of academic misconduct will be handled according to University regulations.

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code.

Important Dates Restricting Opportunities to Drop Course Spring 2016:

Days into Semester	Opportunities	Drop Dates
To 15th instructional day	Students can drop classes on Cyberbear with refund	February 13 = last day
16th to 45th instructional day	Drop requires form with instructor and advisor signature, a $10 fee from registrar's office; student will receive a 'W' on transcript, no refund.	February 13 through March 28,2016
Beginning 46th instructional day	Students are only allowed to drop a class under very limited and unusual circumstances. Not doing well in the class, deciding you are concerned about how the class grade might affect your GPA, deciding you did not want to take the class after all, and similar reasons are not among those limited and unusual circumstances. If you want to drop the class for these sorts of reasons, make sure you do so by the end of the 45th instructional day of the semester.	March 29 – May 6

FOR 330 FOREST ECOLOGY – Spring 2016
General Course Outline and Lab Schedule*

Week / Dates Topic

Week 1 (1/25) Introduction to Course
Introduction to Systems Science
Wed/Thur Lab ***Indoor Lab Week 1*** Literature Searches and Literature Review Paper project

Week 2 (2/1) Systems Modeling, Ecosystem structure, composition, pattern, and dynamics
Wed/Thur Lab ***FIELD LAB 1*** (Meet Campus Security): Forest Ecosystem Structure (Pattee Canyon)

Week 3 (2/8) Soil Water Availability, Hydrologic system, and Environmental Factors:
Variation in potential productivity across Space; Ecological Site
Wed/Thur Lab ***FIELD LAB 2:*** Disturbance and Riparian Forest Structure (Clark Fork River - Tower & 3rd)

Week 4 (2/15) **NO CLASS MONDAY: Presidents Day Holiday**
Disturbance and secondary succession in forest ecosystems
Wed/Thur Lab ***FIELD LAB 3:*** Riparian Forest Structure and Dynamics 2 (Bass Creek)

Week 5 (2/22) Mortality, Decomposition, Nutrient Cycling, and Energy Transfer
Forest Communities: Interactions among plants and other biota
Wed/Thur Lab ***NO LAB***

Week 6 (2/29) Biological Interactions among plants, insects and animals
Forest Community Variation over Space; Key Site Factors Driving Differences
FIELD LAB 4: Local Variation is Community Structure (Rattlesnake NRA)

Week 7 (3/7) Biological Interactions among plants, insects and animals (cont)
Midterm Review
Wed/Thur Lab ***Indoor LAB Midterm 1*** (during lab period W or H March 9-10)

Week 8 (3/14) Fire Disturbance and Ecosystem Dynamics;
Forest Community Variation over Space; Ecological Site Classification
Wed/Thur Lab ***FIELD LAB 5:*** Community Comparisons, Disturbance, and Woody Debris (TBA)

Week 9 (3/21) Dynamics of Tree regeneration, Forest growth and Natural self-thinning
Tree Mortality, Canopy gaps, Old-growth
Wed/Thur Lab ***Group Research Project development***

Week 10 (3/28) Forest Ecosystem Dynamics: Disturbances, Multiple pathways, Novel systems
Invasive, Insect & disease Outbreaks, Aspen Decline, Harvest impacts, Fire Suppression
Wed/Thur Lab ***NO LAB***

Week SB (4/4) **SPRING BREAK**

Week 11 (4/11) Biological Diversity and Determinants
World Forests and major differences related between forest biomes
Wed/Thur Lab ***FIELD LAB 6:*** Ground flora, Group Research Project development (Blue Mtn. NRA)

Week 12 (4/18) Species Richness, Species-area curves, and Diversity
Midterm Review
Wed/Thur Lab ***Midterm 2*** during Lab period Wed 4/20 or Th 4/21

Week 13 (4/25) Urban ecosystems, urban forestry, streams, and urban-wildland interface
Brief presentation of Lit Review topics to classmates (during W class in groups outside)
Wed/Thur Lab ***Field Lab 7: Species Richness Lab*** (Blue Mtn. NRA)

Week 14 (5/2) Further considerations of Spatial and Temporal Scales - Synthesis
Final Exam Review
Wed/Thur Lab ***Group Research Project Presentation***

Finals Wk (5/9) ***Final Exam, Friday, May 13, 10:10am – 12:10pm***

***Schedule may be modified slightly as the semester progresses**
****Discussion Readings, and other Resources and Assignments (with due dates) provided via Moodle**