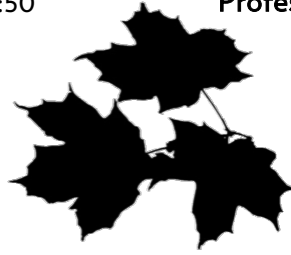


BI 344

Forest Ecology

Lecture/Laboratory: Tu/Th 8:00-10:50
MS 124



Professor: Dr. Scott A. Kimball
Email: skimball@bakeru.edu
Phone: 785.594.4563
Office: Mulvane 229
Office hours: MW 7:30-8:30am and
11:30am-2:00pm

Course Description:

This course will provide a basic introduction to the ecology of forests, with special consideration given to the relationships between plants and animals adapted to eastern deciduous forests found in Northeastern Kansas. The course will include lab and field-based exercises as well as assigned readings from texts and primary literature to provide a fundamental understanding of ecological principles and field techniques that are unique to the study of forest ecology.

Prerequisite: BI 254 or permission of instructor

Required Texts:

- *Yahner RH. 2000. Eastern Deciduous Forests: Ecology and Wildlife Conservation. 2nd Edition. University of Minnesota Press, Minneapolis, MN. ISBN 9780816633609.*
- *Sutton A. 1985. Eastern Forests. National Audubon Society Nature Guides. Knopf. ISBN 9780394731261.*
- lab manual – *Exercises available online on Moodle*
- field notebook (more than one may be needed to complete the work in lab) – *Rite in the Rain® Metric Field Notebook No 363 (4⁵/₈ in x 7 in)*

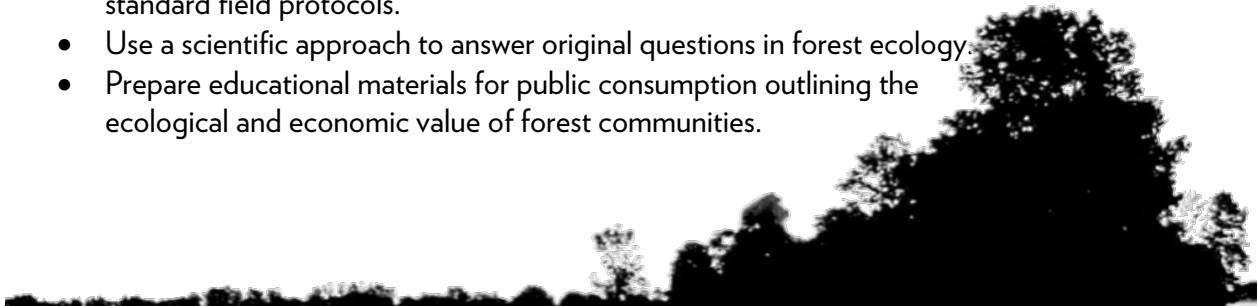
Suggested Text:

- *Sibley DA. 2009. The Sibley Guide to Trees. Knopf. ISBN 9780375415197*

Course Objectives:

Students completing this course should be able to:

- Explain the relationships between and among physiography, land-use history, and forest community members in characterizing eastern deciduous forests types.
- Describe the current conservation imperatives in forest ecology in North America.
- Identify important plant and animal members of the forest communities of Northeastern Kansas from museum specimens and in the field.
- Describe the habitat types of representative forest communities in Douglas County, KS, using standard field protocols.
- Use a scientific approach to answer original questions in forest ecology.
- Prepare educational materials for public consumption outlining the ecological and economic value of forest communities.



Grading:

The final grade is calculated on a percentage basis:

Lecture = 50%

Lab = 50%

Lecture Grading:

Weekly Quizzes = 20%

A short quiz will be given weekly at the beginning of lecture and lecture will follow immediately. All questions will come from the lecture, text book, assigned readings, and class discussion from the preceding week's meetings. Each quiz may consist of multiple-choice questions, fill-in-the-blank, matching, true/false, and/or short answer questions. If you are absent for a quiz you will receive a zero. The lowest 2 quiz grades will be dropped. There are no make-up quizzes.

Weekly Discussions = 10%

Each student will be assigned to lead 2 weekly lecture discussions. To prepare for the lecture discussion, the student leader will select and assign a reading from the primary literature which corresponds to the material from the assigned readings from the text book. This primary literature article will be read by all students before the week's lecture and then openly discussed by all students. The discussion leader will maintain the flow of the discussion and highlight important points from both the text and the assigned article. Students are expected to engage actively in discussion for full credit.

Weekly Discussion Questions = 10%

Each student will prepare a list of five discussion questions to bring each week over the reading assignments for that day's discussion.

3 One-Hour Exams = 45%

Each non-cumulative exam will cover approximately equal proportions of the material in the text as well as supplemental reading assignments.

Species Accounts = 15%

Each student will develop a collection of species accounts describing the ecological and economic value of a major group of species native to and common in forests of Kansas. These accounts will include the species distributions, relationships between each species and other plants and animals in their forest communities, and the economic importance of each species.

Laboratory Grading:

Species Identification Exam (lab-based) = 10%

An exam covering the plant and animal species found in forests of Northeastern Kansas will be based on museum specimens housed in the Baker Collection.

Species Identification Exam (field-based) = 10%

An exam covering the identity of plant and animal species found in forests of Northeastern Kansas will require field identification of common species of upland and lowland forests of Douglas County, KS.

Habitat Type Report = 15%

Each student will prepare a habitat-type report based on data collected in the field from forests representing common ecological communities in Northeastern Kansas. The habitat-type report will include a detailed description of the methodologies used and the results of data collected on site.

Forest Disturbance Report = 15%

Each student will prepare a report on forest disturbance based on data collected in the field from a recent major disturbance event. The disturbance report will include a detailed description of the methodologies used and the results of data collected on site and will be described in the context of major disturbances in forests, generally.

Field Experiment = 20%

Each student will develop an ecological question, formulate a relevant hypothesis, design an appropriate test, and carry out the test either in the field or in the lab. The results of the experiment will be written-up as a formal scientific paper and be presented in an oral presentation format.

Educational Display = 20%

Students, in consultation with faculty and staff, will collaborate to design and construct educational display material detailing the ecological and economic value of riparian forests to be used for public education targeted at non-biologists. These materials may be utilized in the Discovery Center of the Baker University Wetlands and during Baker Wetlands public events.

Attendance and Participation = 10%

Participation is expected and only possible by attending every meeting. Contributions to discussions, activities, and asking/answering questions during meetings will ensure full credit, but more importantly, participation will provide you the best opportunity to succeed in this course.

Grade Scale:

A	94-100%	A-	90-93%
B+	87-89%	B	84-86%
B-			80-83%
C+	77-79%	C	74-76%
C-			70-73%
D+	67-69%	D	64-66%
D-			60-63%
F	0-59%		

Attendance/Make-up Policy:

Attendance is mandatory and expected, but certain circumstances may require an isolated absence. It is the student's responsibility to notify the professor as soon as possible of the expected absence (absolutely no later than one day following the absence, in the case of an emergency) and to make necessary arrangements for course materials. Because this course will involve a great deal of independent and collaborative work, it is the responsibility of each student to perform their required tasks in a timely and efficient manner, such that no student in the course is negatively affected by any other student's performance.

Failure to attend a habitat typing lab generally means that a student will be unable to collect data or other information necessary for the lab report. Therefore, if a student misses a one of these lab activities and still wishes to submit the report, they: 1) ***must*** acknowledge their absence in the habitat type report, 2) ***must*** request lab data from a fellow student, and, 3) *if given permission to use another student's data, must* attribute authorship of that data to the member(s) of the class that collected the data. ***Failure to do so constitutes academic misconduct and will be treated accordingly (see below).***

It is a serious offense to miss a lab or lecture exam. If this happens a grade of zero will be assigned for the missed exam. It is the responsibility of the student to contact the professor ***prior to*** the exam to schedule a make-up. If a student fails to contact the professor prior to the absence/missed exam to make arrangements, a make-up may not be granted. Special considerations may be made, on a case by case basis, if an exam is missed due to completely unavoidable circumstances. In this case, a student may be permitted to take a make-up exam if they contact the professor prior to the day of the next scheduled class. Each student must present a valid excuse at the time of the make-up. Make-up exams, if they are granted, must be completed within 1 week of the original exam date. Make-up exams will be administered at the convenience of the professor. Only one make-up exam may be granted per semester.

Note to Athletes: Athletes who expect to miss an exam or a quiz due to sanctioned activities must notify the instructor as soon as possible and in all cases before the week of the expected absence. In these cases, quizzes and exams may be administered in alternative formats or at earlier dates, depending on specific circumstances and at the discretion of the professor.

Students with Disabilities:

Baker University is committed to providing “reasonable accommodations” in keeping with Section 504 of the Rehabilitation Act and the Americans with Disability Act of 1992. Access Services coordinates accommodations and services for all eligible students with disabilities. If you have a disability and wish to request accommodations and have not contacted Access Services, please do so as soon as possible. Access Services is located on the Baldwin City campus in the Office of Student Academic Success (in Collins Library (lower level); 785-594-8352; sunny.allen@bakeru.edu). Information about Access Services can also be found at www.bakeru.edu/sas. If accommodations have been approved by Access Services, please communicate with your professor(s) regarding your accommodations to coordinate services.

Academic Honesty:

Students are expected to take responsibility for their own work and provide appropriate credit to the authors of works used by the student to complete course work. Students who fail to meet the University's standard of academic honesty in this course will be subject to course penalties at the discretion of the professor, which may include, but are not limited to, automatic failure of an assignment/assessment and/or failure of the course. In addition to course penalties invoked by the professor, all instances of academic misconduct will be reported to the Dean of the CAS who will invoke mandated institutional sanctions as defined in the Student Handbook. Please review the student handbook for a full description of the University's policy on academic misconduct.

From the Student Handbook: Baker University expects students and professors to have solely completed or prepared the work or research that bears their name, and to acknowledge the materials and sources of others.

Students

1. Have the responsibility to do their own academic work.
2. Must acknowledge sources of their materials and material that is the work of others.
3. Have the responsibility to inquire of the professor when they are uncertain as to what constitutes proper acknowledgment.
4. Have the responsibility to inquire of the professor as to what materials and aids are permitted in testing and research work.
5. Have an obligation to know their rights and responsibilities as delineated in the Baker University Student Handbook.
6. Have the responsibility to know the University's position with respect to academic misconduct as set forth in [the student handbook].

Honors Contracts:

Any student with a cumulative grade point average of 3.50 that is interested in taking this course for honors designation should talk to me about the details involved and fill in the necessary form, obtain the required signatures and meet with the honors program director to review the contract before turning in the form to the Records Office. The last day to submit a proposal for an Honors Contract is the last day to add a course for the semester.

Credit Hour Definition and Associated Course Expectations:

Consistent with best practices in higher education, Baker University subscribes to the federal definition of the "credit hour" endorsed by the Higher Learning Commission. Driven by intended learning outcomes and verified by evidence of student achievement, the "credit hour" is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom (or direct faculty) instruction and a minimum of two hours of out-of-class student work per week for the duration of the course enrollment period. A 3-credit-hour course, for example, requires approximately 45 classroom contact hours, roughly 90 out-of-class work hours and approximately 135 total instructional hours over the course of a 15-week semester. In that this course carries 4 hours of credit (3 lecture, 1 lab), approximately 60 hours of classroom instruction and 45 hours of laboratory and field instruction have been planned over the scheduled 15-week period. In addition, students are expected to spend roughly 150 hours (10 hours per week) on out-of-class assignments.



Lecture Schedule (subject to change):

Date	Subject	Text Reading
Week 1 Aug 24	eastern forests introduction	Sutton & Sutton pg. 18-31
Week 2 Aug 29/31	boreal forests	Sutton & Sutton pg. 32-42
Week 3 Sep 5/7	transition forests	Sutton & Sutton pg. 43-57
Week 4 Sep 12/14	mixed deciduous and oak-hickory forests (2 discussion leaders)	Sutton & Sutton pg. 58-80
Week 5 Sep 19/21	southern Appalachians	Sutton & Sutton pg. 81-106
Week 6 Sep 26/28	pine barrens and southern pinelands (2 discussion leaders)	Sutton & Sutton pg. 107-143
Week 7 Oct 3/5	subtropical forests Begin Species Accounts	
Week 8 Oct 10/12	Lecture Exam 1 <i>Fall Break (no class Oct 12) --- WOOHOO!!!!</i>	
Week 9 Oct 17/19	<i>No class meeting this week --- YOWZER!!!!</i>	
Week 10 Oct 24/26	eastern deciduous forests: overview & history; ecological processes (2 discussion leaders)	Yahner pg. 1-48
Week 11 Oct 31/Nov 2	eastern deciduous forests: plant & animal interactions (2 discussion leaders)	Yahner pg. 49-72
Week 12 Nov 7/9	Lecture Exam 2	
Week 13 Nov 14/16	eastern deciduous forests: succession & management; fragmentation (2 discussion leaders)	Yahner pg. 73-129
Week 14 Nov 21/23	eastern deciduous forests: edges & corridors; biodiversity & conservation (2 discussion leaders) <i>Thanksgiving Break (no classes Nov 23) --- YEEHAW!!!!</i>	Yahner pg. 131-174
Week 15 Nov 28/30	Complete Species Accounts eastern deciduous forests: atmosph. & environ. concerns	Yahner pg. 175-204
Week 16 Dec 5/7	Lecture Exam 3	
Finals Week Dec 15	Friday, 8:30 AM: Presentation of Field Experiments	

Laboratory Schedule (subject to change):

Date	Subject
Week 1 Aug 24	Tour of Campus Arboretum
Week 2 Aug 29/31	Tree, Shrub, and Vine Leaf, Bark, and Fruit Identification – field
Week 3 Sep 5/7	Animals of Northeastern Kansas Forests – field
Week 4 Sep 12/14	Begin Field Experiment – forest edge ecology
Week 5 Sep 19/21	Habitat Typing: Riparian Forest Restoration
Week 6 Sep 26/28	Forest Disturbance and Succession
Week 7 Oct 3/5	Forest Disturbance and Succession
Week 8 Oct 10/12	<i>Fall Break (no class Oct 12) --- YESSIREEE!!!!</i> Continue Field Experiment – forest edge ecology
Week 9 Oct 17/19	Complete Field Experiment Habitat Type Reports Due
Week 10 Oct 24/26	Species Identification Exam – field
Week 11 Oct 31/Nov 2	Begin educational display Tree Leaf, Twig, Flower, and Fruit identification – herbarium
Week 12 Nov 7/9	Tree Leaf, Twig, Flower, and Fruit identification – herbarium Continue Educational Display
Week 13 Nov 14/16	Amphibians, Non-avian reptiles, and Mammals of Northeastern Kansas Forests – museum specimens
Week 14 Nov 21/23	Birds of Northeastern Kansas Forests – museum specimens <i>Thanksgiving Break (no classes Nov 25) --- YOWZA!!!!</i>
Week 15 Nov 28/30	Continue Educational Display
Week 16 Dec 5/7	Complete Educational Display Species Identification Exam – lab
Finals Week Dec 15	Friday, 8:30 AM: Presentation of Field Experiments