



EEB 405 Ecosystem Ecology Lab  
Monday 2:30-4:25; Hesler 302  
Email: [iware@vols.utk.edu](mailto:iware@vols.utk.edu)

Instructor: Ian Ware

## Overview

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**Ecosystem ecology** studies the interactions among organisms and between organisms and their physical environment as an integrated system. This lab course introduces observational and experimental research in ecosystem ecology including the design and measurement of carbon cycling, greenhouse plant-soil feedback experiments, and laboratory decomposition manipulations.

## Assignments

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### I. Project Papers – 150 pts

There will be three main projects throughout the course of the semester. These projects and papers will be completed in 3 person groups. For each project, each group will write up their project, analyses, and results in a scientific style paper.

### II. Lab and Field Notebook – 130 pts

All scientists need to be able to record detailed notes and observations both in field and laboratory settings. Whether jotting down ideas, sketching, making observational notes in the field, or taking detailed notation of field or laboratory methodologies, good note taking is a pivotal tool for developing your individual scientific style and process. Notebooks will be collected and critiqued on a regular basis to help develop strong observational and methodological skills (**10 pts per entry**). Don't be afraid to use your own creative license in the development of your lab notebook throughout the fall semester as we explore the complexity of natural systems. Enjoy this assignment!

### III. Participation/Discussion – 75 pts

Strong collaboration is pivotal to successful science. Therefore, a participation grade will be given for each lab meeting. Participation will be based off of discussions and individual participation within the group projects. A total of 25 points is possible for each project.

<b>Week</b>	<b>Activity</b>	<b>Description</b>
1/15	No class	MLK holiday
1/22	Decomposition Project Design	Experimental design discussion (Dutilleul 1993); Decomposition discussion (Aerts 1997); <b>Litter Decomposition Project</b> design
1/29	Decomposition Project Setup	<b>Litter Decomposition Project</b> design and setup
2/5	Introduction to R	<b>Coding and basic analytical ecology in R</b>
2/12	Decomposition Project Harvest	<b>Litter Decomposition Project</b> harvest and analysis <b>R tutorial assignment due</b>
2/19	Urbanization/Invasion Project Design	Invasive species discussion (Simberloff 2015); Jar experiment discussion (Saggar et al. 1999); <b>Urbanization/Invasion Project</b> design
2/26	Urbanization/Invasion Project Collection	<b>Urbanization/Invasion Project</b> field collection; <b><u>Litter Decomposition Project Paper due</u></b>
3/5	Urbanization/Invasion Project Setup	<b>Urbanization/Invasion Project</b> setup
3/12	No class	Spring Break
3/19	Urbanization/Invasion Project Harvest	<b>Urbanization/Invasion Project</b> incubation measurements, harvest and analysis
3/26	Plant-Soil Interactions Project Design	Eco-Evo Plant-Soil discussion (Lau and Lennon 2011) Plant trait discussion (Cornwell and Ackerly 2009) <b>Plant-Soil Interactions Project</b> design
4/2	Plant-Soil Interactions Project Setup	<b>Plant-Soil Linkages Project</b> setup; <b><u>Urbanization/Invasion Project Paper due</u></b>
4/9	Plant-Soil Interactions Project Measurement	<b>Plant-Soil Interactions Project</b> plant trait measurements; <b>Graphing for ecology in R</b>
4/16	Plant-Soil Interactions Project Measurement	<b>Plant-Soil Interactions Project</b> LI-COR measurements and leaf tissue processing for C/N
4/23	Plant-Soil Interactions Project Harvest	<b>Plant-Soil Interactions Project</b> final trait measurements, biomass data collection/processing
4/27	<i>Classes Officially End</i>	--
5/7		<b><u>Plant-Soil Interactions Project Paper due</u></b>

## FINAL GRADES

Final letter grades will be determined by the total percentage of points accumulated:

A	93 – 100%	C	73 – 76%
A-	90 – 92%	C-	70 – 72%
B+	87 – 89%	D+	67 – 69%
B	83 – 86%	D	63 – 66%
B-	80 – 82%	D-	60 – 62%
C+	77 – 79%	F	<60%

## ACADEMIC MATTERS

Academic dishonesty of any sort will not be tolerated. Students should refer to **Hilltopics** for University policies and procedures regarding these instances. You are expected to abide by The University of Tennessee honor statement in all of your university activities.

***"An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."*** (Hilltopics, the UT Student Handbook)

Copying sentences, portions of sentences, or re-phrasing sentences in the same order as another student's will all be flagged as plagiarism by the University's plagiarism software. You may discuss your labs with other students, but write your lab work from your own thoughts. Your written work may be submitted through "SafeAssign" and plagiarism will not be tolerated.

It is expected that all students attending lab will conduct themselves in a manner that is both respectful and accommodating to their laboratory instructors and to their working lab partners/fellow students. Rude and disruptive behavior cannot be tolerated and will result in the dismissal of the student from the lab period and possibly the course.

## ADDITIONAL INFORMATION

**Tennessee Education Lottery Scholarship Recipients:** All courses for which you are enrolled count toward your attempted hour total. You must receive approval from the Office of Financial Aid & Scholarships when withdrawing from UT or changing your enrollment status from full-time to part time in order to maintain good standing for the TELS program. Approvals are only issued for extraordinary circumstances, such as the death of an immediate family member, documented serious illness, or military mobilization. <http://web.utk.edu/~finaid>

**Final exams:** Finals are scheduled by the University Registrar during the university final exam period. There are no conflicting times. "Students are not required to take more than two written exams on any day. The instructor(s) of the last non-departmental exam(s) on that day must reschedule the student's exam during the exam period. It is the obligation of students with such conflicts to make appropriate arrangements with the instructor at least two weeks

prior to the end of classes.” “All final exams must be given during the final exam period at the scheduled time.” [http://registrar.tennessee.edu/academic\\_calendar/finalexams.shtml](http://registrar.tennessee.edu/academic_calendar/finalexams.shtml)

**Disability Services:** If you need course adaptations or accommodations because of a documented disability, or if you have questions or concerns about disabilities or emergency information to share. <http://ods.utk.edu/>; <mailto:ods@utk.edu>

**Counseling Center:** <http://counselingcenter.utk.edu/>; [counselingcenter@utk.edu](mailto:counselingcenter@utk.edu); 865-974-2196

### ACADEMIC ASSISTANCE

**Tutoring:** The Division of Biology does not offer tutoring services. Contact the Student Success Center and the Academic Support Unit of The Office of Minority Student Affairs for information about tutoring opportunities.

**Student Success Center:** The comprehensive source for information, services, and resources to assist your success at UT. <http://studentsuccess.utk.edu/>; [studentsuccess@utk.edu](mailto:studentsuccess@utk.edu); 865-974-6641

**Academic Support Unit of The Office of Minority Student Affairs** offers some tutoring services available to all students, but openings are limited and are filled quickly. The office offers other types academic assistance and support as well. <http://omsa.utk.edu/services/>; [omsa@utk.edu](mailto:omsa@utk.edu)

### TECHNICAL ASSISTANCE

Blackboard, clickers, or general information technology assistance:

- Help Desk: 865-974 9900 (M – F, 8:00 – 5:00)
- OIT Walk-In Help Desk: Commons South, 2<sup>nd</sup> floor Hodges Library

### OTHER RESOURCES

- One Stop: <http://onestop.utk.edu> Start here for any questions
- Undergraduate Catalogs: <http://catalog.utk.edu/> Listing of academic programs, courses, and policies
- Hilltopics: <http://dos.utk.edu/hilltopics> Campus and academic policies, procedures and standards of conduct
- Course Timetable: [https://bannersb.utk.edu/kbanpr/bwckschd.p\\_disp\\_dyn\\_sched](https://bannersb.utk.edu/kbanpr/bwckschd.p_disp_dyn_sched) Schedule of classes
- Academic Planning: <http://www.utk.edu/advising> Advising resources, course requirements, and major guides
- Library: <http://www.lib.utk.edu/> Access to library resources, databases, course reserves, and services
- Career Services: <http://career.utk.edu/> Career counseling and resources; HIRE-A-VOL job search system
- Peer-reviewed literature: <https://webofknowledge.com/> (Web of Science); [www.jstor.org/](http://www.jstor.org/) (JSTOR). These websites can be accessed while on UTK internet OR by logging in with your NetID and password through <http://www.lib.utk.edu/databases/>