



THE UNIVERSITY OF
ARIZONA[®]
TUCSON ARIZONA

Laboratory of Tree-Ring Research

Dendroecology
Summer Pre-Session 2007
14 May – 1 June
Course Syllabus

Lead Instructors (office hours by arrangement during course):

Don Falk, LTRR, dafalk@u.arizona.edu, 626-7201. Office 206 West Stadium.

Tom Swetnam, LTRR, tswetnam@ltrr.arizona.edu, 621-2112. Office 105 West Stadium.

Ann Lynch, US Forest Service, Rocky Mountain Research Station,
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Teaching assistant:

Rebecca Franklin, LTRR, rebecca@ltrr.arizona.edu, tel. 621-9731. Office hours by arrangement during course.

Lead laboratory instructors:

Chris Baisan, LTRR, cbaisan@ltrr.arizona.edu, 621-7681

Rex Adams, LTRR, radams@ltrr.arizona.edu, 626-3617

Course web site: <http://www.ltrr.arizona.edu/summerschool/>

LTRR web site: <http://www.ltrr.arizona.edu/>

University of Arizona web site: <http://www.arizona.edu/>

Dendroecology is the study of ecology through the use of the tree-ring record. This record is retained over time due to the remarkable preservation qualities of wood, and across the wide geographical distribution of trees. Through the science of dendrochronology, a broad range of ecological variables can be reconstructed and analyzed, including temporal and spatial variation in climate, disturbance, competition, insect outbreaks, and other phenomena. The result is a remarkably long and detailed record of ecological variability.

This three-week intensive course will introduce students to basic theory and techniques in dendroecology. Lectures, laboratory training, and a multi-day field trip with sample and data collection are integral to the course and learning strategy. The course will be based at the Laboratory of Tree-Ring Research on the campus of the University of Arizona in

Dendroecology, Laboratory of Tree-Ring Research, Summer 2007

Tucson. The class is designed for graduate or advanced undergraduate students or with an interest in the field, as well as faculty and postdoctoral researchers. Working professionals in forest ecology and management are also encouraged to participate.

Lectures will be presented by the course instructors and guest lecturers from the LTRR and other research units. The course will convene at 9:30 AM on Monday, May 14 in the Environment and Natural Resources Building (ENRB), Room 253. A detailed lecture schedule with daily activities will be provided at the beginning of the course. Dendroecology will be convened simultaneously with courses in dendroclimatology and dendroarchaeology; some joint lectures are scheduled.

Readings. Readings are drawn primarily from the published literature. We will distribute readings for the second and third weeks during the first week of class, and some sessions will be devoted to discussing current literature seminar style. Readings will be distributed as hard copies during the course, or as electronic copies. Please make every effort to read assigned material before the relevant lecture.

Laboratories are an integral part of the learning experience. A sequence of laboratories will take the student through basic principles of accurately cross-dating wood samples. Lab sessions will include introduction to dating temporal events (such as fires) as well as creating and working with ring-width series to understand the ecology of tree growth as a time series. Students will also be introduced to a variety of computer programs used in dendroecological research.

Field trip. Weather and forest conditions permitting, we will make a 3-4 day field trip to the Pinaleño Mountains in southeastern Arizona. A detailed field trip schedule will be distributed during the course. Field trip content is integrated to the fullest extent possible with course lectures and laboratories.

Student projects. Students taking the course for graduate credit (GEOS 597k or equivalent) participate in a group paper or lab project of suitable scale given the short duration of the class. Further instructions will be provided at the beginning of the course.

Grading and evaluation. Grades and non-credit evaluations will be assigned on the following basis:

Class participation, completion of readings, final project	50%
Field trip participation	25%
Laboratory participation	<u>25%</u>
	100%

Welcome to dendroecology!