Course Description

This course focuses on "indigenously developed" and what used to be call "traditional" farming methods and techniques. Such practices are those not dependent on either fossil fuels, chemical fertilizers, or other external inputs, and hence have been called "Low external-input technologies" (LEIT). Based on "indigenous technical knowledge" (ITK), they are typically small in scale, involving for the most part the labor of individuals, families, and communities. Emphasis is placed on those systems most commonly used in various parts of the world today and in times past.

Agriculture is treated here as the transformation of biophysical, sometimes referred to inappropriately as "natural," environments, into "cultural" environments. It is assessed in regard to both the plants cultivated (crops), and the soil, slope, moisture, and temperature conditions that exist and those that are either modified or created by farmers. The processes involved in the domestication of
both crops and landscapes are discussed. Ecological and systematic approaches are taken in order to understand how different agricultural strategies insure continual long-term productivity and stability similar to that characteristic of environments that are not cultivated. Microeconomics is all-important.

The various "agro-ecosystems" are also discussed as economic activities that have highly visible spatial manifestations that result in distinctive "landscapes," and as activities that are dynamic, changing continuously. Development is treated conceptually as a specific type of change, not necessarily as a goal. It is envisaged as improvement in land productivity. It is the opposite of land degradation. Agricultural features such as terraces and canals are considered "landesque capital." Social, political, and cultural aspects of agriculture and development are not topics dealt with here.

This is not a "how to" course for tree-hugging, granola-eating acolytes of John Muir who wish to make the world into some unrealistic utopia. It is not intended for students who, like Kinky Friedman, went to Borneo to teach agriculture to people who'd been farming successfully for 2000 years. This course is not about developing "sustainable agriculture." It is, however, designed for students who wish to gain a better understanding of the complexity of human-environment interactions, particularly as they pertain to people feeding themselves.

Enrollment Information

This course is offered almost every spring
semester at the undergraduate level (339K) and occasionally at the graduate level (390S).

Course number: GRG 339K and GRG 390S Unique number: 36685 Meeting time: MWF 11:00-noon Meeting room: CLA 0.128

Instructor Information

Instructor: William E. Doolittle Office: CLA 3.704 Hours: by appointment via email email: dolitl@austin.utexas.edu

Teaching Assistant: email:

Textbooks

There is NO textbook for this course. Instead, 1-2 readings for undergraduate students and 3-4 readings for graduate students will be available in Canvas for each class meeting.

Copies of all PowerPoint illustrations (slides) used in class will also be available in Canvas. Students are strongly encouraged to convert them using OCR or some other annotatable format and use them in class to assist in taking notes.

Basis of Grading

Undergraduate Students (339K)

Three 33-question multiple choice examinations of equal value. Class participation, based largely but not exclusively on attendance. The course grade based on the average score of the three exams will be dropped one letter for four unexcused absences, two letters for seven unexcused absences, three letters for ten unexcused absences, four letters for 13 unexcused absences.

Graduate Students (390S)

Three take-home essay examinations. Each exam is worth 25% of the course grade (75% total) One class lecture worth 25% Class participation. Same as for undergraduate students (see above).

http://uts.cc.utexas.edu/~wd/courses/339k/general/descrip.html Created by William E. Doolittle. Last revised 27 September 2014, wed

Schedule

Tentative Schedule Spring 2015
January 21 23 F Antecedents

March 2 4 W
6 F 9 M 11 W 13 F
W Pressing Received Wisdom
26 M Mutation and Hybridization 28 W Domestication Processes 30 F Dump Heaps

February 2 4 W Automatic Selection
6 F Deliberate Selection 9 M Sexual Translocation Theory, etc. 11 W Diffusion 13 F Slash and Burn Shifting Cultivation 16 M Examination 1
18 W The Harvest of Fear, pt. 1 20 F The Harvest of Fear, pt. 2 23 M Technological Change: Land and Labor 25 W Technological Change: Labor and Tools 27 F Dynamic Land Use and Labor Productivity

M Gardens
M Diminishing Returns Investments
Spatial Dimensions of Economic Rent Raised Fields: Wetlands Raised Fields: Other Functions Reality Check: no class meeting
16-20 M-F 23 M 25 W 27 F 30 M

April 1 W 3 F
6 M 8 W 10 F 13 M 15 W 17 F 20 M
22 W
24 F 27 M 29 W
May 1 F 4 M 6 W
8 F 13 W

SPRING BREAK Reality Check: no class meeting The Secret of El Dorado Wet Rice: Ecology Wet Rice: Water Control and Land Use Taro Cultivation Reality Check: no class meeting Building Taro Terraces EXAMINATION 2 Terracing: Form and Function Terracing: Variations on a Theme Erosion and Reclamation Hope in a Changing Climate Soil Moisture Retention Professional Conf: no class meeting

Professional Conf: no class meeting Springs, Qanats, and Norias Utilizing Runoff Canal Irrigation

Aqueducts and Siphons Irrigated Fields and Water Distribution Overview EXAMINATION 3, 9am-noon