Environment, Development, and Food Production

(GRG 339K and GRG 390S)

Description, Enrollment, Instructor, Books, Grading

Schedule

Student Lectures

http://uts.cc.utexas.edu/~wd/courses/339k/ag.html

Created by William E. Doolittle in 1996 and continuously updated.
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 technolgies" (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 "howto" course for tree-hugging, granola-eating acolytes of John Muir who wish to remold 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," per se. It does, however, deal with issues of concern in the field of sustainability science, and is intended 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: 37818

Meeting time: MWF 11:00-noon

Meeting room: GDC 1.406

Instructor Information

Instructor: William E. Doolittle

Office: CLA 3.704

Hours: by appointment via email

email: dolitl@austin.utexas.edu

Teaching Assistant: Christine Bonthius

email: cmbonthius@gmail.com

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 13 December 2013, wed
Schedule

Tentative Schedule

Spring 2014

January
13  M  Introduction
15  W  Antecedents
17  F  Mutation and Hybridization
20  M  **Holiday: no class meeting**
22  W  Domestication Processes
24  F  Dump Heaps
27  M  Gardens
29  W  Automatic Selection
31  F  Deliberate Selection

February
  3  M  Sexual Translocation Theory, etc.
  5  W  Diffusion
  7  F  Slash and Burn Shifting Cultivation
10  M  **Examination 1**
12  W  Technological Change: Land and Labor
14  F  Technological Change: Labor and Tools
17  M  Dynamic Land Use and Labor Productivity
19  W  Diminishing Returns
21  F  Investments
24  M  Spatial Dimensions of Economic Rent
26  W  Raised Fields: Wetlands
28  F  Raised Fields: Other Functions

March
  3  M  The Secret of El Dorado
  5  W  Wet Rice: Ecology
  7  F  **Reality Check: no class meeting**
  10-14  M-F  **SPRING BREAK**
  17  M  **Reality Check: no class meeting**
19  W  The Harvest of Fear, pt. 1
21  F  The Harvest of Fear, pt. 2
24  M  Wet Rice: Water Control and Land Use
26  W  Taro Cultivation
28  F  Building Taro Terraces
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<th>Date</th>
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<tr>
<td>31</td>
<td>M</td>
<td>EXAMINATION 2</td>
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<td>2</td>
<td>W</td>
<td>Terracing: Channels</td>
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<td>4</td>
<td>F</td>
<td>Terracing: Hill Slopes</td>
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<td>7</td>
<td>M</td>
<td>Erosion and Reclamation</td>
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<td>9</td>
<td>W</td>
<td><em>Promise of the Land</em></td>
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<td>11</td>
<td>F</td>
<td><strong>Professional Meetings: no class</strong></td>
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<td>14</td>
<td>M</td>
<td>Soil Moisture Retention</td>
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<td>16</td>
<td>W</td>
<td>Springs, Qanats, and Norias</td>
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<td>18</td>
<td>F</td>
<td><strong>Reality Check: no class meeting</strong></td>
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<td>21</td>
<td>M</td>
<td>Utilizing Runoff</td>
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<td>23</td>
<td>W</td>
<td>Canal Irrigation</td>
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<td>25</td>
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<td>Aqueducts and Siphons</td>
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<td>28</td>
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<td>30</td>
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<td><em>Mysteries of Peru</em></td>
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