AG 230 -- SUSTAINABLE AGRICULTURE

COURSE DESCRIPTION: Evaluation of conventional and alternative farming methods in the USA, Polynesia, Southeast Asia, Africa, and Latin America from a long-term perspective. Analysis of the effects of those practices on environmental quality, agroecosystems, and food security. Consideration of conflicting values and resolution.

COURSE OBJECTIVES:

1. To acquaint the student from agricultural as well as other disciplines with conventional and alternative agricultural production practices throughout the world and their effect on long-term sustainability and environmental quality.

2. To show how agricultural scientists are attempting to minimize agricultural pollution and sustain food production adequate for the world's population.

EXPECTED LEARNING OUTCOMES:

1. The student will be able to explain the major aspects of agricultural practices and traditions through time and throughout the world, including the USA, Polynesia, Southeast Asia, Africa, and Latin America.

2. The student will be able to explain in general the relationships among culture, economics, politics, science, and agricultural development. A solid understanding of the cross-cultural interactions and exchange that linked the world’s people and facilitated agricultural development is also expected.

3. The student will have studied and analyzed refereed-journal articles, texts, and practices that represent the perspectives of different societies and agricultural traditions.

INSTRUCTOR: Dr. Bruce W. Mathews

TEXTS:


REFERENCES:  


Schewee, W. Nurturing the soil - feeding the people. Rex Publishing, Philippines

### GRADING:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>100 pts</td>
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<tr>
<td>Exam 2</td>
<td>100 pts</td>
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<tr>
<td>Final (60% new material)</td>
<td>140 pts</td>
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<tr>
<td>Problem sets/questions</td>
<td>60 pts</td>
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<tr>
<td>Term Paper</td>
<td>100 pts</td>
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<tr>
<td>Lab assign./participation</td>
<td>100 pts</td>
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<tr>
<td>Total possible</td>
<td>600 pts</td>
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- 540 or more (≥ 90%) = A
- 480-539 (80 - 89%) = B
- 420-479 (70 - 79%) = C
- 360-419 (60 - 69%) = D
- 359 or less (≤ 59%) = F

Note: Assignments turned in one class period late will be docked 20%. Assignments turned in one week late (or thereafter) will be docked 40%.

### SUSTAINABLE AGRICULTURE - LECTURE OUTLINE

1. Alternative Farming Movements in the Tropics
2. Tropical Agriculture and Food Security  
3. Transforming the Rural Tropics: Property, Markets, Cooperatives, and Technological Change  
4. Social Organization and Sustainability of Small Farm Agriculture in the Tropics  
5. Agroecological Education and Training  
6. Ecological Pest Management  
7. Intercropping  
8. Mechanization  
9. Advances in Integrated and Organic Soil Management  
10. Waste Recycling  
11. Integration of Crops and Livestock  
12. Urban Agriculture  
13. Agronomic Crop Production in the Tropics  
14. Medicinal Crops  
15. Ecological Agriculture in Southeast Asia and China (UNEP Bulletin)  
16. Ecological Considerations for the Future of Food Security in Africa (Brown article)  
17. Sustainable Agriculture in Latin and South America (Gliessman and Villachica articles)  
18. Systems for Sustainability in Polynesia (Clarke and Thaman articles)

**SUSTAINABLE AGRICULTURE LABORATORY**

1. Projects comparing conventional and alternative crop production practices will be conducted by the students at the University Farm. These will include experiments on soil preparation; use of composts, mulches, and manures; plant spacing and combinations; agroforestry; and germplasm evaluation. In addition, there will be a number of activities at the sustainable agriculture demonstration site.

2. Field trips to various production operations and research facilities.

Note: Shoes are required for all lab activities!