Organic Food Crop Production
TPSS 220
Course Justification

1. What is the course modification?

Formation of new lecture-laboratory course

2. Why is this course being requested or modified?

The rapid expansion of certified organic agriculture and demand for its products, which has been sustained for over a decade, has resulted in intense popular interest and a dramatic rise in the number of students interested in the subject. Sodexho sells organic at half of the colleges it serves and 13% of students surveyed nationwide recently said they strongly preferred organic foods to other foods (USA Today 9/27/2006). This interest has extended to the classroom and many Universities offer courses in organic food crop production. Student demand has been such that several Land Grant institutions have initiated degree programs in organic agriculture, including the University of Florida (http://news.ufl.edu/2006/08/31/organic-ag/), Washington Sate University (http://afs.wsu.edu/organic.htm) and Colorado State University (http://organic.colostate.edu/). Demand for the course locally is apparent through student feedback, the popularity of the college’s organic agriculture website (http://www.ctahr.hawaii.edu/organic/, averaging 600 hits per month), and membership in the UH organic agriculture listserve (99 members).

Although the University of Hawaii is uniquely positioned to be an educational leader in tropical organic food crop production, there is currently no course which focuses on presenting the subject. The absence of such a course contrasts with student demand, and perpetuates popular misconceptions of organic agriculture as either the sole option for agricultural sustainability, or an emotion-based fad with little practical value in commercial agriculture. Approval of this course will provide the necessary venue to establish a solid, science-based foundation for students interested in sustainable food production in general, and certified organic agriculture in particular.

3. How will the content be organized?

Please see attached syllabus

4. What other courses at UHM closely parallel the proposed course and in what way will the latter make a distinct contribution?

There is no undergraduate-level course that focuses primarily on the unique issues and challenges involved with certified organic agricultural systems. The most closely allied courses are TPSS 200 (Tropical Crop Science, 3 cr) and TPSS 300 (Tropical Production Systems, 4 cr). TPSS 200 focuses on the requirements and interactions of crop plants with the abiotic and biotic components of their environment, while TPSS 300 compares and contrasts production strategies as they apply to crop management systems. The breadth of both courses is appropriate for establishing a foundation for students majoring
in the agricultural sciences. However, such breadth precludes adequate depth in focusing on meeting crop needs within the context of certified organic systems, which rely heavily on ecological processes within the production system and avoids the use of most synthetic inputs. This course will fill that gap.

5. Where or how does the proposed course fit into the current and future curriculum?
This course will meet general Natural Science requirement, and will be open to non-majors. For undergraduate students within CTAHR, this course will provide the opportunity to apply principles learned in TPSS 200 in designing strategies to meet crop needs without many effective fertility and pest control options available to other systems. This course will better prepare these students to make comparisons between certified organic systems and other less exclusive systems in TPSS 300. This course will provide a science-based foundation for subsequent in-depth study of production, economic, social and policy sustainability that may be explored in the following classes:

- PEPS 250 The World of Insects (3) Biology/ecology of insects with emphasis on relationships to plants, animals, and especially people in Hawai‘i and the tropics.
- TPSS 304 Fundamentals of Soil Science (4) (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawaiian soils.
- PEPS 310 Environment and Agriculture (3) Overview of environmental issues and impacts associated with agriculture, specifically pest management issues, and options for environmentally responsible management and amelioration of these impacts.
- NREM 302 Natural Resource and Environmental Policy (3) Introduction to American government policy in natural resources and environmental protection at federal, Hawaii state and county levels. Policy principles, legal structure, governmental agencies, major statutes and programs, analytical techniques, program assessments.
- GEOG 314 Tropical Agrarian Systems (3) Analysis of environmental potential and constraints and of spatial organization of economy and society of tropical agrarian systems. Emphasis on change through colonial and post-colonial periods.

6. Why is the number of credits and level justified? Explain the prerequisites and the absence thereof.
This is a laboratory course with total weekly scheduled contact of 170 minutes.

7. How will the course assist students to achieve the critical skills and competencies expected of CTAHR graduates?

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<tr>
<th>Skill</th>
<th>Course assistance in providing these skills</th>
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<tbody>
<tr>
<td>Written communication</td>
<td>Exams, lab notebook teach writing in a logically and grammatically correct manner.</td>
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<tr>
<td>Oral communication</td>
<td>Presentation of student selected topic will improve and evaluate students ability to speak in front of a group of peers in a confident, organized and effective manner.</td>
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<tr>
<td>Analytical/problem solving</td>
<td>Lectures, labs and exams are designed to train students to define problems, identify solutions problems</td>
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commonly faced in organic agriculture, and to use the scientific method of investigation through lab activities.

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<tr>
<th>Personal characteristics</th>
<th>A sense of responsibility and time management skills will be built/strengthened through project management and timely completion of assignments.</th>
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<tr>
<td>Human Relations</td>
<td>Students will be expected to work and communicate effectively in groups.</td>
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<tr>
<td>Business management</td>
<td>Students will learn strategies to promote/evaluate economic viability such as determining cost of production, and selecting markets.</td>
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<tr>
<td>Real world experience</td>
<td>A combination of hands-on laboratory investigations and farm visits will assist students apply what they learn in the classroom to real problems in the field.</td>
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<td>Leadership skills</td>
<td>N/A</td>
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<td>Computer skills</td>
<td>N/A</td>
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<tr>
<td>Global perspective</td>
<td>Traditional agricultural practices from around the world will be highlighted throughout the course and their value in certified organic systems discussed. Concepts of social sustainability and quality of life as they pertain to agriculture will also be presented.</td>
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8. How will students be evaluated?

Please see syllabus.

9. What are the minimum qualifications for teaching this course? Is a qualified instructor now available?

Requirements for teaching this course include a familiarity with organic certification guidelines in Hawaii, contacts with Hawaii’s organic agriculture industry, knowledge and applied experience in plant physiology, production, sustainable farming systems and management strategies directly relevant to certified organic agriculture. A qualified instructor is currently available.

10. How will the course be financed, assuming no further cutbacks?

Lab supplies, printing and other expenses will be financed by the department’s instructional budget.

11. Has the course been offered before? Is there a demand for it?

The course has not been offered before. Please see item 1 with regard to demand.
12. Is the course cross-listed with another department?

No