COURSE JUSTIFICATION FOR “RESTORATION ECOLOGY (NREM 682)”

1. How is the proposed course linked to stated learning outcomes of the degree program?
The Student Learning Outcomes (SLOs) for a M.S. or Ph.D. degree in NREM are: (a) Students are expected to acquire quantitative reasoning, critical thinking and other advanced skills, and (b) students are expected to utilize these skills to solve resource use problems and assist in developing sound resource policies.

The proposed course will give students experience with both SLOs by providing exposure to a topic of considerable importance to the management of natural resources (i.e., restoring damaged, degraded or destroyed ecosystems). As a graduate seminar discussion course, students will be required to read and discuss the primary and secondary literature. This will require a high level of quantitative reasoning and critical analysis. By emphasizing case studies from Hawaii and throughout the world, students will be exposed to methods of applying the science and theory of restoration ecology to the real world management of natural resources. During the course, students will be introduced to the key topics, current thinking, and state-of-the-art practice of the science of restoration ecology, and practice of ecological restoration.

2. What is the course modification?
N/A

3. Why is this course being requested or modified?
a. Restoration Ecology will be offered by a recently hired Assistant Professor (Dr. Creighton M. Litton). Part of Dr. Litton’s contract is to develop new coursework in the areas of ecology and restoration.

b. This course will fill a gap in current coursework available to graduate students in NREM, and from across campus. The topic is of considerable importance to the missions of both the Department and College, specifically the science and management of natural resources.

4. How will the content be organized?
See attached syllabus.

5. What other courses at UHM closely parallel the proposed course and in what way will the latter make a distinct contribution?
No other course at UHM closely parallels the proposed course.

6. Where or how does the proposed course fit into the current and future curriculum?
NREM is actively expanding the coursework available to both graduate and undergraduate students in our department, as well as the college and university. This has been largely possible through the recent hires of new faculty members (3 in the past 1½ years). One area of focus for course expansion is in forestry and forest ecology. Restoration Ecology fits squarely in this focal area and will provide graduate students with exposure to a relatively new and rapidly growing
field in ecology that will continue to play a key role in the management of natural resources in the foreseeable future.

7. Why is the number of credits and level justified? Explain the prerequisites and the absence thereof.

a. This is a lecture (~30%)/discussion (~70%) seminar course that will meet 1x/week for 100 minutes (= 2 credit hours). This framework will permit the instructor to introduce the key concepts necessary for the critical analysis and discussion of the primary literature that will occur each week.

b. Prerequisites are upper division undergraduate coursework in ecology and graduate standing, or consent.

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

In Restoration Ecology, CTAHR students will gain competence primarily in skill categories 2 (oral communications), 3 (analytical/problem solving skills), and 10 (global perspective), although aspects of almost every skill category are applicable. As a graduate seminar course, the majority of time will be spent discussing (category 1) and analyzing (category 3) primary and secondary literature (e.g., peer-reviewed journal articles and the assigned textbook). Each student will lead 1-2 of these discussions, and all students are expected to actively participate in each discussion. Leading a discussion will also require students to display positive personal characteristics (category 4), human relations skills (category 5), and leadership skills (category 8). As a globally important topic, Restoration Ecology will provide a global perspective (category 10) by helping students understand global natural resource issues through the use of case studies from Hawaii and around the world.

9. How will students be evaluated?

Student evaluation will be based on leading 1-2 discussions on assigned readings from the primary literature (33%), and active participation in all weekly discussions (33%). In addition, a final comprehensive written examination (33%) will assess student knowledge of the sum of materials and concepts covered in lectures and discussed throughout the semester (See syllabus for more information).

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

An instructor is currently available to teach this course. Dr. Creighton M. Litton is a newly hired Assistant Professor in NREM with considerable experience in forest ecology and the restoration of ecosystem processes in degraded landscapes. If the instructor were to become unavailable, qualifications for future instructors would include advanced degrees in ecology and experience (courses and/or research) in restoration. Currently, NREM has two other rank 3 instructors who would be qualified to teach this course (Drs. Greg Bruland and Travis Idol).

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

No funds are required above and beyond normal departmental operating funds.
12. Has the course been offered before? Is there a demand for it?

This is a new course that, to our knowledge, has never been offered in CTAHR or the University of Hawaii at Manoa. In the Fall semester of 2007, two undergraduate courses in Restoration Ecology were offered at the University of Hawaii at Hilo by Dr. Ken Erwing, a visiting professor from the University of Washington (http://courses.washington.edu/reseco/index.htm). We expect total enrollment of 10-12 students/semester (limit of 15, with preference given to students from NREM), with the majority of these coming from NREM and other departments within CTAHR (TPSS, PEPS). Additional students will likely come from the Departments of Botany and Geography. Restoration Ecology is a relatively new and rapidly expanding discipline that has its roots in the application of basic ecological theory to restore degraded or destroyed ecosystems (e.g., species assemblages and ecosystem services). Providing exposure to this important topic will be highly beneficial to graduate students in NREM and across campus.

13. Is the course cross-listed with another department?

N/A