University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course

1. Type of Action
   - A. Addition
   - B. Deletion
   - C. Modification:
     - in credits
     - in title
     - in prerequisites or co-requisites
     - Other

1. New Alpha, Number and Title AQUA 201 The Hawaiian Fishpond
3. Credits 3 credits

4. Old Alpha, Number and Title

5. Credits *

6. New Catalog Description
   An introduction into the history, development, biology and ecology, management, restoration, and future of Hawaiian fishponds. This course will study traditional Hawaiian fishponds, merging traditional knowledge with the principles of modern Western science.

7. Select box and type specific information in text box.
   - Prerequisites
   - Corequisites
   - Recommended Preparation
   Concurrent registration in AQUA 201L

8. Student Contact Hours Per Week
   - Lecture 3
   - Lecture/Lab 3
   - Lab 0
   - Other (click to specify)

9. Proposed Date of First Offering
   - Semester Spring
   - Year 2006

10. This course is proposed for the * Program. * can fulfill * If Other, specify
    General Education Core as NS I
    Bio-Resources and Technology Academic Subject Certificate in Bio-Resource Development and Management (Elective Set I: Technology, Utilization, and management)
    Hawaiian Studies Academic Subject Certificate

11. This course Makes No Difference in the number of credits required for the program/core.

12. Equivalent or similar courses offered in the UH System:

<table>
<thead>
<tr>
<th>Campus</th>
<th>Alpha, Number, Title</th>
<th>Campus</th>
<th>Alpha, Number, Title</th>
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</thead>
<tbody>
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</table>

13. This course is (check one and click in appropriate textbox and provide details):
   - Already articulated with
   - Provide details of existing or desired articulation (date, college(s), purposes, pre-major, etc.) in this space:
   - Appropriate for Articulation with Natural Science general education core requirement (as a biological science) at all UH campuses.
   - Provide details of existing or desired articulation (date, college(s), purposes, pre-major or major, etc.) in this space:
   - Not yet appropriate for Articulation.

14. Reason for Initiating, Modifying or Deleting Courses or Other Pertinent Comment:
   AQUA 201 is a new course being offered to support the curriculum for the Academic Subject Certificates in Hawaiian Studies and Bio-Resources and Technology.

Requested by: [Signature]
Department Chairperson
Date: 12-2-02

Approved by: [Signature]
Curriculum Committee Chairperson
Date: 1-25-05

[Signature]
Dean of Instruction
Date: 2/4/05

[Signature]
Dean of Instruction
Date: 2/11/05

CCCMM 6100 (Amended for WCC use October 2001)
Levels of Review of Course Proposal at Windward Community College

Course Alpha, Number, and Title: AQUA 201 The Hawaiian Fishpond

Signatures

1. Department Area (more than one departmental instructor's signature required)

   [Signature]  
   [Signature]  
   [Signature]  
   Dates: 12/2/04, 12/2/04, 12/2/04

2. Department

   [Signature] Joseph E. Corti
   Department Chairperson

   Was this course discussed in a department meeting? ☑ Yes ☐ No
   Dates: 12/2/04

2. Division

   [Signature] Elizabeth Ashley

   Dates: 12/6/04

2. Curriculum Committee Review

   Approved ☑
   Disapproved ☐

   Reason:

   [Signature] Jean Shibuya
   Curriculum Committee Chairperson

   Dates: Jan 25, 2005

CCCM #6100 (Amended for WCC use October 2001)
1. How is this course related to the education needs and goals of the College/Department/Community as reflected in the EDP/ADP?

   *This class fulfills the college's commitment to developing and enhancing its Hawaiian studies and environmental studies curriculum.*

2. Provide details of any additional staff, equipment, facilities, library/media material, faculty preparation and other financial support that would be required to implement this course. (Include an estimate of the actual cost of supplies and equipment.) What has been done to provide for these additional costs for the proposed date of offering? Who will teach the course?

   *The initial offerings of this course would involve alternation with existing classes (e.g., IS 201) or it would be supported through the solicitation of extramural funds (e.g., Sea Grant, USDA, or private foundation funds).*

3. Is a similar course taught elsewhere in the UH system?  *No* If yes, provide details of how this course differs from existing similar courses.

   *No. During Fall 2001, UHM offered HWST 397, Malama Loko I’a: Fishpond Management. This course was apparently experimental and no comparable course appears in the current UHM catalog.*

4. Is this course experimental and/or unique to Windward Community College?  *Yes* If yes, provide rationale and details of its impact on the College Curriculum

   *Other than its similarity to UHM’s HWST 397, this class is unlike any class in the University system. Its impact is in contributing to the course offerings accepted by the Academic Subject Certificate in Bio-Resources and Technology, Bio-Resource Development and Management Track. It also supports the Hawaiian Studies Program.*

5. Is a similar course taught in the upper division level by a 4-year UH college?  *No* If yes, explain why this course is appropriate at the lower division or how it differs from its upper division counterpart.

   See comments under #’s 3 & 4 above.

6. Please attach a complete course outline. Your course outline should address all the items listed in the Guidelines for Course Outlines.

7. If this course is numbered 100 or above or appropriate for transfer to a 4-year college, complete and attach *WCC Form for Transfer Courses* (blue). See criteria for transfer courses.
WCC Form for Transfer Courses
(To be completed for articulation with any 4-year UH campus)
(This sheet was originally blue.)

Course Alpha and Number AQUA 201

Submitted by Dave Krupp

Date December 2, 2004

1. List the counterpart to this course on any 4-year UH campus. Describe the relationship between the course any related baccalaureate program area.

   The nearest counterpart was HWST 397, which apparently offered on an experimental basis during Fall 2001. It apparently has not been offered since then. Nor is HWST 397 listed in the current (or recent) UHM catalogs. However, AQUA 201, as a course suitable for consideration as biological science general education core class, presents a sufficiently different emphasis to be regarded as a different course. It may be possible for this class to count towards requirements in the UHM and UHH Hawaiian Studies program. The course may also be considered for completing requirements in UHM's Hui Konohiki program (in development).

2. Is this course taught or accepted by major accredited colleges or universities? Give one or two examples.

   No.

3. Please attach a complete course outline if you have not done so already. Your course outline should address all the items listed in the Guidelines for Course Outlines.
COURSE ARTICULATION FORM (GENERAL EDUCATION CORE)

ORIGINATING CAMPUS: Windward Community College         DATE SUBMITTED: December 2, 2004

COURSE ALPHA & NUMBER: AQUA 201         SEMESTER CREDITS: 3

COURSE TITLE: The Hawaiian Fishpond Laboratory

DATE OF OUTLINE: December 2, 2004

(** Representative outline, no multiple syllabi, please.)

1. Articulation committee to review this course:

   Standing Committees
   Written Communication
   Mathematical & Logical Thinking
   World Civilizations
   Languages
   Arts & Humanities
   Natural Science
   Social Science

2. The information in this item is required by the reviewing committee so that it has a starting point for reviewing the course. It is the responsibility of the submitting campus to do the necessary research to provide this information.

   In the opinion of the originating campus, this course is equivalent to the following and/or meets the criteria for the indicated core categories. Every core category space, except your own campus, must be filled in (can include ‘none’). An equivalent course, if known, may be helpful to committee members but is not required.

<table>
<thead>
<tr>
<th>Receiving Campus</th>
<th>Equivalent Course (Alpha and Number)</th>
<th>Core Category</th>
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</thead>
<tbody>
<tr>
<td>UH Hilo</td>
<td>none</td>
<td>Biology</td>
</tr>
<tr>
<td>UH Manoa</td>
<td>none</td>
<td>DB</td>
</tr>
<tr>
<td>UH West Oahu</td>
<td>none</td>
<td>Natural Sciences</td>
</tr>
<tr>
<td>Hawaii CC</td>
<td>none</td>
<td>Group 1 Biology</td>
</tr>
<tr>
<td>Honolulu CC</td>
<td>none</td>
<td>NS1</td>
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<tr>
<td>Kapiolani CC</td>
<td>none</td>
<td>NS1</td>
</tr>
<tr>
<td>Kauai CC</td>
<td>none</td>
<td>Group 1 Biology</td>
</tr>
<tr>
<td>Leeward CC</td>
<td>none</td>
<td>NS1</td>
</tr>
<tr>
<td>Maui CC</td>
<td>none</td>
<td>Natural Science</td>
</tr>
<tr>
<td>Windward CC</td>
<td>none</td>
<td></td>
</tr>
</tbody>
</table>

3. If submitted electronically, I understand that this outline will be posted to a publicly accessible web site to enable open access for reviewing committees and campuses. The outline will be taken off the site upon completion of the review.

Typed Name or Signature

SUBMIT TO: UCA Clearinghouse, Attn: John Muth
Chancellor's Office for CC, 2327 Dole Street

Revised 1/19/01
WINDWARD COMMUNITY COLLEGE
OUTLINE OF COURSE OBJECTIVES

COURSE NAME: The Hawaiian Fishpond
COURSE ALPHA: AQUA 201
CREDIT HOURS: 03

CATALOG DESCRIPTION:
An introduction into the history, development, biology and ecology, management, restoration, and future of Hawaiian fishponds. This course will study traditional Hawaiian fishponds, merging traditional knowledge with the principles of modern Western science. (3 hours lecture)

REQUIREMENTS COURSE SATISFIES:

➢ Requested: Natural Science General Education Core for the Associates Degree in Liberal Arts as a Biological Science Lecture Class (Natural Sciences Group 1).
➢ Requested: Hawaiian Studies Academic Subject Certificate Requirements at Windward Community College (as an elective).

PREREQUISITES: None

RECOMMENDED COURSES: AQUA 201L The Hawaiian Fishpond Laboratory taken concurrently

RECOMMENDED SKILL LEVELS: College-level reading/writing skills

ACTIVITIES REQUIRED AT SCHEDULED TIMES OTHER THAN CLASS TIME: none

INSTRUCTOR:
OFFICE:
TELEPHONE:
FAX:
E-MAIL:
INSTRUCTOR'S WEBPAGE:

AQUA 201 WEBPAGE:

EFFECTIVE DATE: Spring 2006
COURSE GOALS

Upon completion of this course the student should understand and appreciate:

- the importance of traditional Hawaiian fishponds to the Hawaiians and why it’s important to understand them in the context of modern Western science;
- the interaction between human activities and the natural environment as it applies to fishponds; and
- challenges to and strategies for achieving sustainability (or economic viability) in the modern world based on the study of traditional Hawaiian fishponds.

COURSE OBJECTIVES

Upon completion of this course a student will have achieved the course goals by being able to describe and discuss analytically the following topics:

- the philosophy and characteristics of science and the scientific method;
- the characteristics of living things, how they are classified and named;
- basic ecological principles, especially those applying to aquatic ecosystems and fishponds;
- the types of traditional Hawaiian fishponds, the history of their construction and use throughout the Hawaiian islands, how and where they were constructed, their operation and management (stocking, cultivation, harvesting and maintenance), their characteristics, and their biota;
- the oceanography of Hawaiian fishponds (water circulation, stratification, water chemistry and properties, sediment composition and characteristics, and biogeochemical cycles);
- the biology of important fishpond species, especially their modes of nutrition, life cycles, and interactions with other fishpond species as well as their physical environment;
- the basic principles of aquaculture, including pond dynamics, feeding regimes, cultivated species propagation and growth, disease management, production, harvesting and maintenance;
- the operation and functioning of the fishpond in the Ahupua‘a;
- the integration between traditional practices and modern aquaculture methodologies;
- Hawaiian utilization of fishpond species;
- modern fishpond problems (disuse and natural degradation, agricultural and urban development, pollution, and invasive species);
- Hawaii fishpond restoration: approaches, problems and possible solutions, and examples of restoration projects; and
- the future of Hawaiian fishponds: whether they will become mere interesting archeological curiosities or they will represent models of sustainability for the future.
MODE OF INSTRUCTION

The previously described objectives may be achieved through the aid of the following learning activities:

- assigned readings;
- class lecture and demonstrations;
- webpage and Internet resources;
- writing assignments; and

The material presented in all modes of instruction will be of an introductory nature but sufficient in content to allow serious study by the interested student. Assigned readings will serve to provide background and supplemental information to provide a broad base for a basic study. Class lectures will build upon this base, helping to focus the student to some of the more important details.

EVALUATION OF OBJECTIVE ACHIEVEMENT

TERM PROJECT/REPORT. The student will complete a term project on a topic relating to Hawaiian fishponds. The nature of the project will be explained in class. But this project may be any of the following (depending upon the instructor’s discretion): library research project (written report); development of appropriate demonstration/curriculum materials (may involve models, written reports, or some other form of media); group project (documented as a written or oral report); or a service learning project. (100 points total)

QUIZZES. The student will take a minimum of ten quizzes (10 points each; 100 points total). These quizzes will address the detailed content and major concepts presented in the lectures, lecture outlines, text readings, and study guide activities. If the student takes more than ten quizzes, only the best ten quiz scores will be used in calculating the student’s total points. Quizzes will be administered only during the first ten minutes of class period during which the quiz is scheduled.

EXAMINATIONS. The student will take one midterm examination (100 points) and one non-cumulative final examination (100 points) to demonstrate understanding of information presented during lectures and assigned readings.

METHOD OF GRADING

The assignment of points will be according to the following protocol:

Term Project/Report ............................................ 100 points
Quizzes (ten @ 10 points each) ......................... 100 points
Lecture Examinations (two @ 100 points each) .... 200 points
TOTAL .................................................................. 400 points
Letter grades will be assigned as follows:

A ------90% or above in total points.
B ------80-89.9% of total points.
C ------65-79.9% of total points.
D ------55-64.9% of total points.
F ------Below 55% of total points or informal or incomplete official withdrawal from course.
I ------Incomplete; given at the instructor's option when student is unable to complete a small part of the course because of circumstances beyond his or her control. It is the student's responsibility to make up incomplete work. Failure to satisfactorily make up incomplete work within the appropriate time period will result in a grade change for "I" to the contingency grade identified by the instructor (see catalog).
CR ----65% or above in total points; the student must indicate the intent to take the course as CR/NC in writing by the end of the 10th week of classes (see catalog).
NC ----Below 65% of total points; this grade only available under the CR/NC option (see above and see catalog).
N ------Below 55% of total points because of documented serious illness or emergency that prevents the student from officially withdrawing from the course; not used as an alternative for an "F" grade; given at the instructor's option.
W------Official withdrawal from the course after the third week and prior to the end of the 10th week of classes (see catalog).

The instructor may announce extra credit options at various times during the course. However, in order for the student to be eligible for any extra credit activity, the student must demonstrate responsibility in completing all regular course assignments, taking the minimum number of quizzes (ten), and taking both examinations. In addition the student must demonstrate a sustained interest in the content of the course by regularly attending and participating in class. Some extra credit assignments may require same-day class attendance in order for the student to be eligible to receive credit for these assignments. The instructor is not obligated to accept projects for extra credit.

Waiver of minimum level of achievement and course requirements may be given only in unique situations at the instructor's discretion.

Students involved in academic dishonesty will receive an "F" grade for the course.

STUDENT RESPONSIBILITIES

Students are expected to attend all lectures, participate in all activities, and complete all course assignments on time.

Students are expected to be prepared in advance when they arrive to class. Being prepared includes the following: having already read text materials (e.g., textbook readings and handouts) assigned for that day's activities; and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.).
Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time in class. It is the student's responsibility to be informed of these changes.

It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day of erase period and last day for making an official withdrawal).

Science courses at W.C.C. generally require two to three hours of independent private study time for each hour in class (depends upon the student's science background). It is the student's responsibility to allocate the appropriate time needed for study in an environment conducive to quality study. The student must budget time efficiently and be realistic about all personal and professional commitments that consume time.

**HOW TO SUCCEED IN THIS CLASS**

AQUA 201 includes substantial environmental and biological science content. Understanding environmental and biological science involves understanding many difficult concepts and vocabulary, not just knowing facts. You should know that the details to these concepts are important. In addition, you will be introduced to hundreds of new words. In some cases, words that are familiar to you in a context other than environmental and biological science will be introduced to you in the context of environmental and biological science. You will need to understand and use these terms in an environmental and biological science context.

While you may be provided with lecture outlines that include study guides, you will not succeed in this class unless you take your own careful lecture notes and read the corresponding material in the textbook. The lecture outlines are not to be used in place of your own note taking. As soon as possible (best if you do it the same day), copy over your lecture notes filling in gaps and missing information by referring to the lecture outlines and textbook. You should carefully review these rewritten lecture notes as often as possible. In addition to reviewing these notes before a quiz or exam, it would be useful to try to rewrite these notes from memory.

In addition to copying over your lecture notes, your study activities should include drawing your own labeled diagrams or graphs that illustrate important concepts and phenomena. These diagrams need not be works of art, but should clearly illustrate significant information. Before a quiz or exam, it would be useful to redraw these labeled diagrams and graphs from memory.

Make flashcards for each new vocabulary word you learn (refer to study guides provided for a list of terms). On one side write the word. On the other side write the appropriate definition for the word. Test your ability to provide the right definition as often as possible. Practice using the word to explain biological concepts.
Write out answers to all of the study guide questions as though you were required to turn them in. Allow someone else to read your answers and give you feedback. Read someone else's answers and provide constructive feedback.

Read the textbook materials corresponding to a particular lecture before and after that lecture. Review this material before quizzes and exams.

**TEXTBOOK AND OTHER ASSIGNED INSTRUCTIONAL MATERIALS**

*Required texts:*


*Selected text readings may also be assigned from the following materials (placed on reserve in the library or photocopied for distribution to students):*


Titcomb, M., 1978. Native Use of Marine Invertebrates in Old Hawaii. Pacific Science 32(4): 325-386. [This text is no longer in print; copies may be provided as a PDF file downloadable from the course website.]


Other materials may include handouts or Internet resources developed by the instructor.

OTHER INFORMATION

Important Dates:

Last day to add or drop a class .................
Last day of erase period .........................
Last day for official withdrawal ............... 

Instructor's Office Hours (or by appointment):

Sample Schedule of Lecture Topics
Based Upon Fall 2004 Calendar

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>23-Aug</td>
<td>Course Introduction</td>
</tr>
<tr>
<td>25-Aug</td>
<td>Science and the Scientific Method</td>
</tr>
<tr>
<td>27-Aug</td>
<td>The Ahupua'a</td>
</tr>
<tr>
<td>30-Aug</td>
<td>Traditional Fishing and Land Use</td>
</tr>
<tr>
<td>1-Sep</td>
<td>Overview of Fishtraps and Fishponds</td>
</tr>
<tr>
<td>3-Sep</td>
<td>Characteristics of Living Things</td>
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<tr>
<td>6-Sep</td>
<td>HOLIDAY: Labor Day</td>
</tr>
<tr>
<td>8-Sep</td>
<td>Scientific Classification and Naming of Living Things</td>
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<tr>
<td>10-Sep</td>
<td>Hawaiian Nomenclature of Living Things</td>
</tr>
<tr>
<td>13-Sep</td>
<td>Overview of Animal Phyla</td>
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<tr>
<td>15-Sep</td>
<td>Biology of Fishpond Life: Freshwater Plants</td>
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<tr>
<td>17-Sep</td>
<td>Biology of Fishpond Life: Seaweeds (Limu)</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
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<tr>
<td>20-Sep</td>
<td>Biology of Fishpond Life: Crustaceans</td>
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<tr>
<td>22-Sep</td>
<td>Biology of Fishpond Life: Mollusks</td>
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<tr>
<td>24-Sep</td>
<td>Biology of Fishpond Life: O'opu, Awa, 'Ama'ama, Aholehole</td>
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<tr>
<td>27-Sep</td>
<td>Biology of Fishpond Life: Weke, Kumu, Awa'aua, 'O'io</td>
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<tr>
<td>29-Sep</td>
<td>Biology of Fishpond Life: Papi (Ulua), Nehu, Akule</td>
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<tr>
<td>1-Oct</td>
<td>Biology of Fishpond Life: Palani, Pualu, Kala, Manini</td>
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<tr>
<td>4-Oct</td>
<td>Biology of Fishpond Life: Moi, Kaku, Kahala</td>
</tr>
<tr>
<td>6-Oct</td>
<td>Biology of Fishpond Life: Uhu, Hinalea, O'opu hue, Pahi</td>
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<tr>
<td>8-Oct</td>
<td>Ecological Principles I</td>
</tr>
<tr>
<td>11-Oct</td>
<td>Ecological Principles II</td>
</tr>
<tr>
<td>13-Oct</td>
<td>Midterm Examination</td>
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<tr>
<td>15-Oct</td>
<td>The Physical Oceanography of Fishponds</td>
</tr>
<tr>
<td>18-Oct</td>
<td>Ecology of Hawaiian Fishponds: The Water Column</td>
</tr>
<tr>
<td>20-Oct</td>
<td>Ecology of Hawaiian Fishponds: The Benthos and Sediments</td>
</tr>
<tr>
<td>22-Oct</td>
<td>Nutrient Dynamics (Biogeochemical Cycling) of Fishponds</td>
</tr>
<tr>
<td>27-Oct</td>
<td>Types of Aquaculture</td>
</tr>
<tr>
<td>29-Oct</td>
<td>Propagation, Feeding, and Growth of Aqua-Cultivated Species</td>
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<tr>
<td>1-Nov</td>
<td>Diseases and Disease Management</td>
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<tr>
<td>3-Nov</td>
<td>Pond Production</td>
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<td>5-Nov</td>
<td>Harvesting</td>
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<tr>
<td>8-Nov</td>
<td>Aquaculture Pond Maintenance</td>
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<tr>
<td>10-Nov</td>
<td>Modern Biotechnological Applications in Aquaculture</td>
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<tr>
<td>12-Nov</td>
<td>Hawaiian Fishpond Construction and Engineering</td>
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<tr>
<td>15-Nov</td>
<td>Traditional Hawaiian Fishpond Management Practices</td>
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<tr>
<td>17-Nov</td>
<td>Traditional Hawaiian Fishpond Management Practices</td>
</tr>
<tr>
<td>19-Nov</td>
<td>Hawaiian Uses of Fishpond Species</td>
</tr>
<tr>
<td>22-Nov</td>
<td>History of Fishpond Development in the Hawaiian Islands</td>
</tr>
<tr>
<td>24-Nov</td>
<td>Fishpond Problems: Natural Degradation and Human Impacts</td>
</tr>
<tr>
<td>26-Nov</td>
<td>Thanksgiving Recess</td>
</tr>
<tr>
<td>29-Nov</td>
<td>Fishpond Problems: Invasive Species</td>
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<tr>
<td>1-Dec</td>
<td>Current Status of Fishponds in Hawaii</td>
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<tr>
<td>3-Dec</td>
<td>Hawaiian Fishpond Restoration: Approaches &amp; Pitfalls</td>
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<tr>
<td>6-Dec</td>
<td>Hawaiian Fishpond Restoration: Examples</td>
</tr>
<tr>
<td>8-Dec</td>
<td>The Future of the Hawaiian Fishpond</td>
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<tr>
<td></td>
<td>Finals Week</td>
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<tr>
<td></td>
<td>Final Examination</td>
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