**CHAMINADE UNIVERSITY OF HONOLULU**
**ED 648 Science and Environmental Education (3 credits)**
**Winter 2009**

**INSTRUCTOR:**

Kathy Kawaguchi
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**OFFICE HOURS:**

Brogan Hall Room #130
Mondays and Wednesdays: 3:00 p.m. – 5:00 p.m. or by appointment

**COURSE TIME and LOCATION:**

Wednesdays, 5:30 p.m. – 9:40 p.m.
Brogan Hall Room #103

**LIVETEXT:**

Submission of Signature Assignment (mini-unit plan) and other assignments as identified by the instructor require a *LiveText* account. Login to LiveText at www.livetext.com

**CATALOG DESCRIPTION:**

This science course focuses on approaches to showing the history of our planets and its inhabitants, promotes interdisciplinary science studies relating to zoological, botanical, geological and cultural studies in the classroom.

**COURSE SUMMARY:**

The ED 648 course will actively involve students in inquiry-based science activities which integrates the big ideas of physical, life, and earth and space science into the study of specific Hawaiian ecosystems. Emphasis will be placed on the: 1) development of students' deep understanding of the dynamic interrelationships of organisms with one another and with their physical surroundings, 2) effective instructional strategies to maximize student learning, 3) strategies to evaluate environmental issues and actions, and 4) the Hawaii Content and Performance Standards III (HCPS III) for Science and other content areas as they are integrated with the study of science.

**MAJOR COURSE TOPICS:**

1) Big Ideas in Science
2) Conceptual Teaching
3) Teaching Models and Strategies to Increase Student Achievement
4) Differentiated Instruction
5) Standards-Based Unit Planning

**PROGRAM OUTCOMES:**

1) Students design meaningful learning experiences that incorporate knowledge of content, students, learner outcomes, pedagogy, and assessment at appropriate grade levels. **(PLAN)**
2) Students evaluate elements of change in the classroom and the wider world, actively bringing this awareness to work with students, faculty, and other members of the community. **(ADAPT)**

**STUDENT LEARNING OUTCOMES:**

| Outcomes/HTSB Standard(s) Addressed | How will outcome be achieved? |
|---|---|
| 1. Develop a balanced and comprehensive mini-unit plan that focuses on the learner, big ideas in science, learner outcomes, assessment plans, and instructional strategies that address the needs of all learner types in the classroom. HTSB 1, 3, 5, 6, 8 | Signature Assignment: Mini-Unit Plan |
| 2. Demonstrate an understanding of: (a) big ideas and concepts in Science aligned with the K-6 Hawai`i Content and Performance Standards (HCPS III); (b) scientific inquiry; and (c) the Nature of Science. HTSB 5, 6, 7, 9 | Weekly Written Assignments, Chapter Quizzes, Science Resource Guide, Pre/Post Test |
| 3. Analyze and apply teaching models and strategies that inform sound decisions to effectively plan lessons and units that are relevant, rigorous, meaningful, and place-based with respect to Hawai`i's students. HTSB 1, 3, 6, 7 | Signature Assignment: Mini-Unit Plan |
| 4. Teach relevant and significant Science lessons and activities to K-6 students, then reflect on strengths and areas of improvements. HTSB 2, 4, 9 | Mini-Lesson Presentations |

**COURSE TEXT, RELATED MATERIALS and SUPPLIES:**

1. Required Textbook:
   Victor, E., Kellough, R.D., Tai, R.H. (2008). *Science K-8: An Integrated Approach* (11th ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.

2. Additional handouts will be given throughout the course

3. 3-ring binder with dividers

4. Laboratory supplies: Many items will be supplied but there are some household items that students will need to bring in for experiments. Instructor will inform students of the types of supplies needed at least one week prior to the experiment.

**ACADEMIC REQUIREMENTS:**

**1. Attendance and Participation**
Students are expected to attend regularly all courses for which they are registered. If a student misses more than one class period without notifying the instructor and making arrangements to complete missed assignments, then his/her final grade will automatically be lowered by one grade. (As per Education Division attendance policy: absences totaling more than 10% of the number of classes will result in a lowering of the overall grade by one letter grade.)

Notification of absence may be done by calling the instructor's campus extension, or by sending an email to the instructor.

All absences and tardiness will require valid reasons in writing to be considered excused.

Make-up work for absences and/or tardiness will need to be initiated by the student and completed prior to the next class meeting. It is the instructor's prerogative to modify deadlines or course requirements accordingly.

**2. Course Assessment**

a. ***Late Work:*** Late work will be accepted with penalty. An assignment will be marked down 5% each week that it is late. Well documented reasons will be considered and may result in assignments not being downgraded. For late work due to an absence, the form of the make-up assignment will be agreed upon between the instructor and the student and will need to be completed upon return to class.

b. ***Assignments:***

1) Weekly Written Assignments (10 points per assignment)

Written assignments that deal with science pedagogy, science concepts and big ideas, and/or current and relevant environmental issues will be made on weeks #1 - #8. Responses should be reflective, critical and accurate.

A class discussion on the assignment will be held in the proceeding week.

2) Chapter Quizzes (20 points per quiz)

Following the chapter readings (two chapters at a time) and other science-related readings, students will be given a short quiz. Quizzes are NOT designed to assess rote recall of information, instead they are designed to elicit critical and insightful thinking based upon the readings.

3) Science Resource Guide (60 points)

Students will create a resource guide that relates to their final mini-unit plan. This guide should include at least:

a) Two website reviews
b) Two book reviews
c) Two journal article reviews

Students will be completing parts of this guide during the ten weeks of the course. Students will have an opportunity to revise/improve their reviews upon receiving instructor feedback. The final Science Resource Guide will be due on the final day of class, Wednesday, March 18, 2009.

4) Mini-Unit Plan + Class Presentations (160 points)

Prepare a mini-unit plan that:

a) requires the investigation of an environmental concept of the student's choice which is appropriate for the grade level the student is or will be teaching. The determination of the unit focus will be determined in collaboration with the instructor.

b) requires the integration of at least one other content areas with science.
c) is completed on the unit plan template provided in LiveText and all elements of the template are comprehensively addressed.
d) includes a minimum of three lessons plans for the mini-unit. (Lesson plan template will be provided in LiveText.)
e) includes a cover page which provides a rationale for the mini-unit, goal(s) of the unit, a general timeline of activities and lessons, big ideas, concepts and skills which are overtly addressed by the lessons, HCPS III standards and benchmarks addressed, student learner outcomes and related performance assessments.(Template will be provided.)
f) is submitted to the instructor via LiveText on or before March 20, 2009.

Presentations related to the mini-unit plan: (This requirement addresses the instructional practice component of this course.)
a) During the 7th week, students will present/teach the anticipatory set of their first lesson in their mini-unit and will submit a copy of that lesson to the instructor on the template provided.
b) During the final class period, students will share with the class an overview of their unit and conduct a mini-lesson for the class to participate in. (Students need to provide copies of their cover page and the lesson plan template from which the mini-lesson is derived.)

**3. Course Assessment Breakdown:**

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| Participation/Attendance (2pts./class) | = | 20 pts. (5%) |
| Weekly Written Assignments (10 pts. each) | = | 80 pts. (20%) |
| Four Chapter Quizzes (20 pts. each) | = | 80 pts. (20%) |
| Science Resource Guide | = | 60 pts. (15%) |
| Mini Unit Plan + At least Three Lesson Plans | = | 120 pts. (30%) |
| Classroom Presentation/Teaching (20 pts. each) | = | 40 pts. (10%) |
| **TOTAL POINTS POSSIBLE** | **=** | **400 pts.** |

**NOTE: Two points per day will be deducted for late assignments. A zero (0) will be given for any assignment not turned-in by the last class session.**

**Grading/Scoring Scale:**

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| **360 - 400 points** | **=** | **A = Advanced/Exceeds Proficiency** |
| **320 - 359 points** | **=** | **B = Proficient/Meets Standards** |
| **280 - 319 points** | **=** | **C = Partially Proficient** |
| **279 points & below** | **=** | **F = Novice/Does Not Meet Standards** |

**UNIVERSITY POLICIES:**

**Writing Standards**

All work submitted by Chaminade University students must meet the following writing standards. Written assignments should:

1. Use correctly the grammar, spelling, punctuation, and sentence structure of Standard Written English.
2. Develop ideas, themes, and main points coherently and concisely.
3. Adopt modes and styles appropriate to their purpose and audience.
4. Be clear, complete, and effective.
5. Carefully analyze and synthesize materials and ideas borrowed from sources. In addition, the sources of the borrowed material should be correctly acknowledged to avoid plagiarism.

**Plagiarism** – "Plagiarism is the offering of work of another as one's own. Plagiarism is a serious offense and may include, but is not limited to, the following:

1. Complete or partial copying directly from a published or unpublished source without proper acknowledgement to the author. Minor changes in wording or syntax are not sufficient to avoid charges of plagiarism. Proper acknowledgement of the source of a text is always mandatory.
2. Paraphrasing the work of another without proper author acknowledgement.
3. Submitting as one's own original work (however freely given or purchased) the original exam, research paper, manuscript, report, computer file, or other assignment that has been prepared by another individual.

**Incompletes**

An incomplete (I) may be given to a student who did not complete a portion of the work due to circumstances beyond the control of the student. The incomplete contract must be signed by the student and the instructor. The work must be completed in 90 days. If it is not, the incomplete will revert to the grade that the student would have earned as specified on the incomplete form.

Please refer to your **Student Handbook**, **General Catalog**, and the **Education Division Policy Manual** for other important institutional and academic policies including more detailed information regarding Plagiarism, Classroom Deportment, Freedom of Expression, Add/Drop, Withdrawals, Disabilities, and others.

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## WEEKLY SCHEDULE

| Week # and Date | Activities | Homework (due NEXT class) |
|---|---|---|
| 1<br>1/18/09 | ~ Introductions<br>~ Course Overview<br>~ Course Expectations and Guidelines<br>~ Pre-Assessment<br>~ Professional Dispositions<br>~ Concept Attainment/Concept Development on "Ecosystem"<br>~ Components of an Ecosystem | ~ Written Assignment<br>~ Read Chapter 1<br>~ Keep a list of things you wonder about, complete chart, and submit on 2/11/09<br>~ *Read "From the Sea to the Mountains" and View Related Video by 1/28/09* |
| 2<br>1/21/09 | ~ Written Assignment Discussion<br>~ Ecosystem Unit (continued)<br>~ Strategies for Increasing Student Achievement | ~ Dispositions Self Report<br>~ Read Chapter 7, Prepare Notes and Summary of Chapter 7<br>~ Read "From the Sea to the Mountains" Handout and View Related Video by 1/28/09<br>~ *Read "Plunging Into the Water" Handout and View Related Video by 2/4/08*<br>~ *Continue list of things you wonder about, complete chart and submit on 2/11/09* |
| 3<br>1/28/09 | ~ Quiz #1<br>~ Written Assignment Discussion<br>~ Turn in Dispositions Self Report<br>~ Guest Speaker – Unit Planning | ~ Written Assignment<br>~ Read Chapter 2<br>~ Read "Plunging Into the Water Cycle" Handout and View Related Video by 2/4/08<br>~ *Post LiveText Unit Plan Ideas (Big Ideas, Concepts) and General Outline of Activities by 2/11/09)*<br>~ *Read "Dispersal Bingo" Handout and View Related Video by 2/11/09*<br>~ *Continue list of things you wonder about, complete chart and submit on 2/11/09* |

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|---|---|---|
| 4<br>2/4/09 | ~ Written Assignment Discussion<br>~ Guest Speaker – Geology and Hydrology of Oahu<br>~ Investigating and Evaluating Environmental Issues/Actions | ~ Read Chapter 3<br>~ Post LiveText Unit Plan Ideas (Big Ideas, Concepts) and General Outline of Activities by 2/11/09)<br>~ Read "Dispersal Bingo" Handout and View Related Video by 2/11/09<br>~ Complete list of things you wonder about, complete chart and submit on 2/11/09<br>*~ Read "The Stream Team" Handout and View Related Video by 2/18/09*<br>*~ Submit two journal reviews for the Science Resource Guide on 2/18/09* |
| 5<br>2/11/09 | ~ Quiz #2<br>~ Written Assignment: "I Wonder" Chart Discussion<br>~ Investigating and Evaluating Environmental Issues/Actions<br>~ Discussion on "I Wonder" and the Sciencing Cycle<br>~ Note: LiveText Posting on Unit Plan Ideas and General Outline of Activities Due | ~ Written Assignment<br>~ Read Chapter 4<br>~ Read "The Stream Team" Handout and View Related Video by 2/18/09<br>~ Submit two journal reviews for the Science Resource Guide on 2/18/09<br>*~ Prepare Lesson #1 for the Mini-Unit and Prepare to Teach the Anticipatory Set of the Lesson on 2/25/09*<br>*~ Submit two website reviews for the Science Resource Guide on 2/25/ 09* |
| 6<br>2/18/09 | ~ Written Assignment Discussion<br>~ Guest Speaker – Nature Conservancy<br>~ Lesson Presentation by Students (30 minutes/student)<br>~ Submit Two Journal Reviews | ~ Written Assignment<br>~ Read Chapter 5<br>~ Prepare Lesson #1 for the Mini-Unit and Prepare to Teach the Anticipatory Set of the Lesson on 2/25/09<br>~ Submit two website reviews for the Science Resource Guide on 2/25/ 09 |
| 7<br>2/25/09 | ~ Quiz #3<br>~ Written Assignment Discussion<br>~ Safety in the Classroom and on Field Trips<br>~ Lesson Presentation by Students (30 minutes/student)<br>~ Submit Lesson Plan #1<br>~ Submit Two Website Reviews | ~ Written Assignment<br>~ Read Chapter 6<br>*~ Submit two book reviews for the Science Resource Guide on 3/11/09*<br>*~ Read "The Hot Spot" Handout and View Related Video by 3/11/09* |

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|---|---|---|
| 8<br>3/4/09 | ~ Written Assignment Discussion<br>~ Guest Speaker – Standards<br>~ Differentiation<br>~ Rubrics Development | ~ Written Assignment<br>~ Read Chapter 8<br>~ Submit two book reviews for the Science Resource Guide on 3/11/09<br>~ Read "The Hot Spot" Handout and View Related Video by 3/11/09 |
| 9<br>3/11/09 | ~ Quiz #4<br>~ Written Assignment Discussion<br>~ Rubrics Development<br>~ Submit Two Book Reviews | ~ Provide for Class: Cover Page and Lesson Plan Template (from mini-unit) for Lesson to be Taught on 3/18/09<br>~ Submit Science Resource Guide<br>~ *Submit Mini-Unit on LiveText by 3/20/09* |
| 10<br>3/18/09 | ~ Submit Science Resource Guide<br>~ Submit Cover Page and Lesson Plan Template (from mini-unit) for Lesson to be Taught<br>~ Lesson Plan Presentation by Students (30 minutes/student)<br>~ Post-Test<br>~ Course Evaluation<br>~ Teacher Evaluation | ~ Submit Mini-Unit on LiveText by 3/20/09 (Signature Assignment)<br>~ Submit all late and/or make-up work by 3/20/09<br>~ Any hard copies of work submitted may be picked up in the CUH Education Office on March 25, 2009.<br>~ LiveText Signature Assignment will be reviewed online by March 25, 2009 |

**NOTE: The weekly class schedule may be adjusted to address guest speaker schedules and needs of students. Changes will be announced in class or via email.**