Honolulu Community College
General Education – DIVERSIFICATION DESIGNATION
Certification and Recertification
Application Form
Spring 2012

APPLICANT: John K. DeLay

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COURSE ALPHA and NUMBER: GEOG 101

COURSE TITLE: The Natural Environment

ESTIMATED NUMBER OF SECTIONS:
Fall: 2
Spring: 2

APPLICATION IS FOR:
☐ New Course    ☐ Modified Course    ☐ Existing Course    ☐ Re-designation
☐ Certification    ☒ Re-Certification. Date of last certification: 1989

DIVERSIFICATION AREA DESIGNATION SOUGHT:
☐ DA (Arts)                                      ☒ DP (Physical Sciences)
☐ DB (Biological Sciences)                       ☐ DS (Social Sciences)
☐ DH (Humanities)                                ☐ DY (Laboratory)
☐ DL (Literature and Language)

What percentage of the CONTENT of this course focuses on this diversification area? 90%

What percentage of CLASS MEETINGS focuses on this diversification area? 90%
1. **Hallmarks and SLOs.** Please explain how course-specific SLOs align with the diversification area’s hallmarks.

The SLO’s and catalog description in the articulation folder are 20 years old. Here I present based on what I am using this semester, which will be going through the DCC process.

**SLO’s**

1. Apply geographic principles, theories, and methods to the study of the physical environment.
2. Identify the key physical processes shaping the Earth’s surface, their interrelationships, and their spatial distribution.
3. Demonstrate knowledge of, and ability to apply, scientific systems of measurement to describe natural phenomena.
4. Interpret maps of physical phenomena to identify patterns.
5. Describe the primary interactions between human societies and the physical environment.

**DP Hallmarks**

1. uses the terminology of the physical sciences;
2. involves knowledge and theories relating to processes in the physical sciences;
3. demonstrates inquiry that involves observation/experiment and reasoning and mathematics.

**Relation**

**DP 1. uses the terminology of the physical sciences;**

1. Applying geographic principles, theories, and methods to the study of the physical environment requires using the terminology of the physical sciences like insolation, albedo, and convection.
2. Identifying the key physical processes shaping the Earth’s surface, their interrelationships, and their spatial distribution requires using the terminology of the physical sciences like geomorphology, plate tectonics, weathering, and erosion.
3. Demonstrating knowledge of, and ability to apply, scientific systems of measurement to describe natural phenomena requires using the terminology of the physical sciences like degrees, meters, and adiabatic lapse rates.
4. Interpreting maps of physical phenomena to identify patterns requires using the terminology of the physical sciences like net radiation, evapotranspiration, and precipitation.
5. Describing the primary interactions between human societies and the physical environment requires using the terminology of the physical sciences like combustion, chlorofluorocarbons, and pyroclastic flows.
DP 2. involves knowledge and theories relating to processes in the physical sciences;

1. Applying geographic principles, theories, and methods to the study of the physical environment requires involving knowledge and theories relating to processes in the physical sciences like electromagnetism and long wave energy fluxes.
2. Identifying the key physical processes shaping the Earth's surface, their interrelationships, and their spatial distribution requires involving knowledge and theories relating to processes in the physical sciences like uniformitarianism and meandering.
3. Demonstrating knowledge of, and ability to apply, scientific systems of measurement to describe natural phenomena requires involving knowledge and theories relating to processes in the physical sciences like orographic uplift and saturation.
4. Interpreting maps of physical phenomena to identify patterns requires involving knowledge and theories relating to processes in the physical sciences like subduction and andesitic volcanism.
5. Describing the primary interactions between human societies and the physical environment requires involving knowledge and theories relating to processes in the physical sciences like greenhouse forcing and transmission.

DP 3. demonstrates inquiry that involves observation/experiment and reasoning and mathematics. Note that Hallmark 3 is nearly identical to that for DB classification as follows, “demonstrates inquiry that is guided by observation/experiment and reasoning/mathematics”. The difference in the DB statement is that it reads, “…is guided by observation/experimentation…”, instead of, “…involves observation/experimentation…” and, “…reasoning/mathematics…” instead of, “reasoning and mathematics”. It is my interpretation that the intention was that SLO’s relating to Hallmark 3 would be guided by the results from observation and/or experimentation (rather than just “experiment”) and mathematics rather that always entailing experiment(ation).

1. Applying geographic principles, theories, and methods to the study of the physical environment demonstrates inquiry that involves observation/experiment and reasoning and mathematics such as recognizing that observed global carbon dioxide levels fluctuate intra-annually as a result of northern hemisphere forest metabolism.
2. Identifying the key physical processes shaping the Earth’s surface, their interrelationships, and their spatial distribution demonstrates inquiry that involves observation/experiment and reasoning and mathematics such as recognizing that the observed precipitation intensity at the global scale is related to insolation intensity and atmospheric convection.
3. Demonstrating knowledge of, and ability to apply, scientific systems of measurement to describe natural phenomena demonstrates inquiry that involves observation/experiment and reasoning and mathematics such as calculating the temperature of an air parcel flowing over a mountain given the observed starting temperature of the air parcel, the mountain height and the lifting condensation level.
4. Interpreting maps of physical phenomena to identify patterns demonstrates inquiry that involves observation/experiment and reasoning and mathematics such as recognizing that the frequency of earthquakes and volcanic eruptions correlates with the distribution of deep ocean trenches and mid-ocean ridges.
5. Describing the primary interactions between human societies and the physical environment demonstrates inquiry that involves observation/experiment and reasoning and mathematics such as recognizing that urbanizing an area will increase local temperatures as net radiation increases with the local surface roughness and evapotranspiration is reduced.
2. **Assessment strategies.** Explain assessment strategies you have used (or plan to use) to measure the degree to which students exit the course with the course-specific SLOs. If there are multiple sections of the course taught by different instructors, please discuss how assessment is (or will be) carried out across instructors.

| Both sections of the course use quizzes, exams, and student project presentations to assess student mastery of the SLOs. Exams include questions that cover all of the SLO’s. Quizzes and student presentations vary in SLO coverage but each relate to at least one SLO. Class discussions are also used to gage student perceptions of course effectiveness, and informal assessment takes place during class discussions. One instructor teaches both sections of the course. |

3. **Assessment of assessment.** How have you used (or plan to use) the assessment findings to modify or improve this course? If there are multiple sections of the course taught by different instructors, please discuss how review of assessment results is (or will be) carried out across instructors.

| I use student performances on exams and quizzes, as well as student course evaluations to assess the effectiveness of the methods and course content. I make adjustments to improve the course in subsequent semesters. I’m choosing embedded exam questions for use during future semesters to provide quantitative measures of SLO mastery. I will express SLO achievement as a percentage of correct responses from the sample. |
DIVERSIFICATION BOARD DECISION:

☐ Approved
  Re-Certification Due: __________________

☐ Not approved
  If not approved, reasons for disapproval:

_____________________________________________________________________

Diversification Board Chair Signature: ________________________________
Date: ______________
Course Description
GEOG 101 is a survey of the global physical environment using an earth systems science approach. In this course, you will be introduced to techniques and concepts used to investigate the geographic distribution of physical phenomena on Earth. Patterns and processes of climatic, geomorphic, and biological systems are examined. Global environmental issues are explored in light of the concepts covered. The lectures will include a number of examples from Hawai‘i, where unique combinations of global tectonic and atmospheric processes, and geographic isolation have resulted in an extraordinary array of environmental and biotic diversity. This course fulfills the Physical Sciences diversification (DP) general education requirement for an associate degree at Honolulu Community College and a baccalaureate degree at the University of Hawai‘i at Mānoa.

Student Learning Objectives
Upon successful completion of GEOG 101, the student should be able to:
1. Apply geographic principles, theories, and methods to the study of the physical environment.
2. Identify the key physical processes shaping the Earth’s surface, their interrelationships, and their spatial distribution.
3. Demonstrate knowledge of, and ability to apply, scientific systems of measurement to describe natural phenomena.
4. Interpret maps of physical phenomena to identify patterns.
5. Describe the primary interactions between human societies and the physical environment.

Required Text

Evaluation
Your grade in the course will be determined from your performance: 4 exams (70%), two term project presentations (20%), and 4 quizzes (10%). Exams are non-comprehensive but the nature of the material requires that you build upon previous concepts. Each exam will consist of about 40 fill in the blank, and multiple choice questions. The term projects will consist of a brief digital presentation focusing on a physical geography topic of interest to you, and one covering a subject agreed upon by your group. Specific requirements regarding the projects and their subcomponents as well as an example are given on the following pages. Students who miss exam sessions must provide documentation for their absence if they wish to make up missed tests. Presentations can only be given on the scheduled days.

Tips for Success
Although it is not a formal component of the course grade, attendance contributes heavily to success. In addition, you should develop a schedule for working on your individual and group projects. Read the appropriate material from the text before we cover it in class. After we cover it, and before exams, read the summary at the end and study the maps and figures. Due to the physical and spatial nature of geographic phenomena, concepts, processes, and patterns are well described by graphical representations. So this is one subject in which “looking at the pictures” will genuinely help you gain a better understanding. If you have a question, do not hesitate to ask it. In summary: doing the reading, studying the figures, coming to class, paying attention, asking questions, and reviewing the subject matter before exams should serve you well.
Individual and Group Term Project Guidelines

The term projects are opportunities for you to investigate the peer-reviewed literature pertaining to a physical geography topic of interest to you, and share your findings with the class. There are 2 projects, an individual effort and a group endeavor. The peer introduction at the beginning of the course will give you the opportunity to get acquainted. These are identical in format but the group project will require you to coordinate with 2-4 other classmates to complete it via electronic communication between your group as you see fit.

Each term project is a digital presentation to the class consisting of 5-7 slides or pages consisting of:

- Title- project title, author(s), class, picture (optional)
- Body- bulleted text, maps, figures and/or pictures
- Citation- listed sources including at least one journal Abstract

The most desirable format for digital presentations in this course is Microsoft Office PowerPoint. OpenOffice Impress is an open source application similar to PowerPoint and available for free download on the web. Keynote and other Macintosh formats will need to be saved in a PC-compatible format to be accepted.

- 32 point minimum font size
- No slide animations or movies
- PowerPoint (ppt, pptx), Open Office Impress (.odp.), or Portable Document Format (.pdf)

There are several sub-assignments related to the project to assure you are making progress. They are:

- Group- a list of members (Group Project only)
- Idea- a sentence describing your topic
- Sources- citations of your sources
- Outline- a paragraph or bulleted list that summarizes/comprises your presentation
- Project- a 5-7 slide PC-compatible digital presentation
- Commentary- a comment or question regarding one project other than your own

A range of 5-7 slides is equivalent to a presentation time of 5 minutes or less. In addition to images, maps, and figures, which you may draw from web sources, slides must comprise summarized information in your own words. At minimum, every slide needs a title. Brief bulleted lists are a good way of conveying the main points. Your presentation should begin with a title slide containing the name of the project, your name, and the class title. It may help to have an introduction slide conveying the scope of your presentation and a conclusions slide summarizing the implications. Your project needs to draw on at least 2 sources of information. One of these must be an abstract from a peer-reviewed scientific journal. Peer-review is a quality control aspect of scientific advancement. Scholars doing research familiarize themselves with the peer-reviewed literature in their field to comprehend the current state of knowledge and guide their future research. After completing a field study, they write up their findings and submit it to a scientific Journal where it is subject to scrutiny by experts in the field before advancing to publication. This differs from purely website content in which individuals or organizations can post unsubstantiated, biased, or misleading claims. Google Scholar is the best source for finding abstracts. The abstract summarizes the research study. Your presentation should summarize the abstract and tie it to the subject matter you are discussing. It should end with a slide containing your references. These should be in a consistent style; MLA, APA, or in the format used by a peer reviewed journal as shown in the example below.

On the next page, I have made an entire presentation just with the information gleaned from a (fictitious) abstract, and a map I obtained from the internet. Since we are you using a visual medium you may want to use more graphics and the abstract material does not have to dominate you topic but must contribute to it.
DETECTION OF LARGE WOODY DEBRIS ACCUMULATIONS IN OLD-GROWTH FORESTS USING SONIC WAVE COLLECTION

INDIANA R. JONES AND ETHAN ALLEN ("ET AL" FOR SHORT)
Department of philosophical biology
University of North Dakota at Hoople
Earl's Corner Bar, Main Street, Hoople, ND

Abstract - We used directional microphones, professional electronic audio recording equipment and personal observation to monitor the accumulation of large woody debris in old-growth forests of northern Wisconsin from June 1999 through July 2001. We hired a really poor undergraduate student to collect nearly 20,000 hours of audio/video tape in really cool areas in the Chequamegon and Nicolet National Forests. Then we made the poor watch all of the tapes and record the fall of large woody debris. Observation times and decibel values for events were correlated with field reconnaissance of the actual debris. Results show strongly that if a tree does fall in the forest, and no one hears it, it does indeed make a sound. Surveys also showed that out of state recreationalists mispronounced 'Chequamegon' in 75% of cases. Wisconsin residents mispronounced the word in 62% of cases, mainly due to alcohol induced slurting.

John K. DeLay
Geography 101

Methods
- Researchers obtained fancy recording equipment.
- They hired poor undergraduate students to live in a sound-proof equipment van.
- The equipment was deployed in Chequamegon-Nicolet National Forest
- They confirmed sonic and video evidence of tree falls

Results
- They collected over 20,000 hours of audio and video.
- Observed falls were associated with sound wave generation.
- Out of state and drunk resident visitors were more likely to mispronounce the park name.

Conclusions
- The available evidence supports the hypothesis that if a tree falls in the forest, it does make a sound even if no one is there to hear it.
- Being out of state or drunk is likely to lead to mispronunciation of the word Chequamegon.

Citations

http://www.fs.usda.gov (Picture)
## Schedule

The schedule indicates the intended scope and timing of materials presented in the course. Each chapter in the text covers a topic which could be presented as a course on its own. The schedule may be modified to allow more time to cover certain subjects and sessions scheduled for review may also be partially used for this purpose.

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Reading: Topic</th>
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<tbody>
<tr>
<td>8/20</td>
<td>M</td>
<td>Introduction, Chapter 1. Essentials of Geography</td>
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<tr>
<td>8/22</td>
<td>W</td>
<td>Chapter 1. Essentials of Geography</td>
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<tr>
<td>8/27</td>
<td>M</td>
<td>Using Maps</td>
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<td>Chapter 2. Solar Energy, Seasons, and the Atmosphere, Project Discussion</td>
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<td>Chapter 10. Weathering, Karst Landscapes, and Mass Movement</td>
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<td>Chapter 13. The Oceans, Coastal Processes, and Landforms (partial content) Projects Due</td>
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