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

APPLICANT: G. Witteman

E-MAIL: witteman@hawaii.edu

COURSE ALPHA and NUMBER: BIOLOGY 103L

COURSE TITLE: Principles of Zoology

ESTIMATED NUMBER OF SECTIONS:
Fall: 1
Spring: 0

APPLICATION IS FOR:
☐ New Course ☐ Modified Course X Existing Course ☐ Re-designation

☐ Certification X Re-Certification. Date of last certification:

DIVERSIFICATION AREA DESIGNATION SOUGHT:
☐ DA (Arts)
   DB (Biological Sciences)
☐ DH (Humanities)
☐ DL (Literature and Language)
☐ DP (Physical Sciences)
☐ DS (Social Sciences)
☒ DY (Laboratory)
What percentage of the CONTENT of this course focuses on this diversification area? 100

What percentage of CLASS MEETINGS focuses on this diversification area? 100

1. **Hallmarks and SLOs.** Please explain how course-specific SLOs align with the diversification area’s hallmarks.

   Biology 103L Laboratory course student learning outcome alignment with diversification hallmarks (DY1-3) is shown here. Note that most of the SLOs for this course address multiple diversification areas directly.

   **Laboratory Specific Learning Objectives or Student Learning Outcomes:**
   Students will be able to:
   
   k. Demonstrate approved techniques in handling laboratory equipment;
   l. Demonstrate the basic biology laboratory techniques that will enable one to make observations and critically analyze scientific data;
   m. Report data accurately and in proper form on the lab report sheets;
   n. Demonstrate the proper use of various scientific tools and equipment, such as dissecting tools, the microscope, stereo microscope, transect and quadrant;
   o. Demonstrate proper dissection procedures used for various available specimens;
   p. Compare the anatomical patterns and functions presented in lecture with the dissection of specimens.

   **DY.1** uses the laboratory methods of the biological sciences. ALL except “p”
   Using approved (standard) laboratory techniques “K”, using these techniques for discovery “L”, recording laboratory results “M” from use of specific tools such as microscopes “N”, for tissue samples and whole organisms used “O” are obvious biological laboratory competencies.

   **DY.2** Involve processes and issues of design, testing, and measurement in the biological sciences. m, n, o
   As concepts and results based only on the scientific method (as all biology and natural science must soley rely), these three SLO’s most directly demonstrate aspects of this process.
   **DY.3** Demonstrates the strengths and limitations of the scientific method. ALL, esp. l.

   **Note:** 100% of the course content meets the three DB hallmarks.

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.

   Students progress in the course is assessed with laboratory exams, active participation in laboratory discussions, and four or more laboratory activities. Laboratory practical exams give the students and opportunity to demonstrate and apply the knowledge, skills and abilities developed during laboratory activities
(all of the SLO's above). Procedures, results and discussions found in student laboratory journals demonstrate development of SLO's k-mo directly between practical exams. Both of these assessments are aligned with intended student learning outcomes and course competencies at the end of the semester.

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.

Since this course is now taught exclusively by adjunct faculty, I have provided each with a packet of instructor materials, including powerpoint slides, syllabus, handouts and section/topic summaries for students. I review results of the pre/post tests and performance on the exams to verify that course topics and objectives are adequately covered and course content aligns with learning outcomes at the end of each fall semester.

**DIVERSIFICATION BOARD DECISION:**

☑ Approved  
Re-Certification Due: **Spring 2013**

☐ Not approved  
If not approved, reasons for disapproval:


Diversification Board Chair Signature: [Signature]  
Date: **1/3/13**
BIOLOGY 103/103L (ZOOLOGY 101): PRINCIPLES OF ZOOLOGY

Instructor: Dr. Greg Witteman
Class Times: MW. 1130-1300, Lab: Tu 1130-1420
Classroom: 5-105
Office hours: M-F(9-10)
Office: 5-101B Phone: 847-9847
web: TBD
E-mail: witteman@hawaii.edu

COURSE DESCRIPTION: This is an introductory Biological Science course with no prerequisites. Biology 103/103L (separate lecture and lab) is cross-listed as Zoology 101(combined lecture and lab course) in keeping with this course's designation at other University of Hawaii campuses. This course articulates as Zool 101/L (U.H. Manoa) and directly as Biology 103/103L and Zoology 101 at all University of Hawaii campuses offering this course. This course (103/103L combined or Zoology 101) fulfills both DB and DY diversification requirements (Biology, Laboratory Science) at Honolulu CC.

The major topics covered in the course are Living animals, their structure, physiology, development, reproduction, evolution, habits, ecology, and their relationship to other living organisms and the environment. Although the lecture (Biology 103) portion of this course can be taken without the lab (103L) this is strongly discouraged. (the Biology 103L laboratory can NOT be taken while previous or current enrollment in Biology 103).

Lecture Student Learning Outcomes: Upon completing the course the student will be able to:
a. examine the basic concepts of chemistry and organic chemistry and their importance in living systems;
b. review evolution and how all the major animal phyla evolved from a common metazoan ancestor;
c. describe the ecology of the major animal groups;
d. identify the types of structures found in animal architecture;
e. classify and list characteristics of tissue types, with particular emphasis on the skin;
f. explain how phylogenetic information is used for classifying animals;
g. describe the major taxonomic groups in the animal kingdom and their relatedness;
h. discuss all of the major phyla in the animal kingdom and describe their ecological relationships, form and function, their basic characteristics, and representative members;
i. strengthen one's interpersonal skills by developing a collaborative critical presentation and/or report;
j. evaluate information from sources, interpret the data, assimilate the information, and critically assess the value of that information;

Laboratory Student Learning Outcomes: Upon completing the course the student will be able to:
k. demonstrate approved techniques in handling laboratory equipment;
l. demonstrate the basic biology laboratory techniques that will enable one to make observations and critically analyze scientific data;
m. report data accurately and in proper form on the lab reports, lab journals or worksheets;
n. demonstrate the proper use of various scientific tools and equipment, such as dissecting tools, the microscope, stereo microscope, transect and quadrant;
o. demonstrate proper dissection procedures used for various available specimens;
p. compare the anatomical patterns and functions presented in lecture with the dissection of specimens.

TEXTS:
Miller & Harley, Zoology (Seventh Edition), McGraw-Hill
Zoology Coloring Book (Elson)

Methods of Evaluation: Your final grade will be based on the total number of points that you receive out of a possible 400 points. For the Lecture portion of the course there will be 3 exams worth 75 points and 5 lecture quizzes or assignments worth 15 points.(total of 300 points) In lab there will be three lab practical examinations worth 25 points and five in class exercises worth 5 points each (total of 100 points). You will be required to keep a lab journal that documents everything you do during lab sessions, and its completeness, format and accuracy will be used to evaluate laboratory exercises and participation. If you are taking only the lecture portion of the course (Biology 103) your grade will only reflect Lecture activities (300 points total).
There will be no make-up examinations without an exceptionally good and documented reason. If you miss an examination, lab exercise or quiz unexcused you will receive no points for that examination and a zero will be averaged with your final grade. There is no extra credit.

**Points needed for letter grades:**

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<thead>
<tr>
<th>Range</th>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>300-270</td>
<td>A</td>
<td>100-90%</td>
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<tr>
<td>269-240</td>
<td>B</td>
<td>89-80%</td>
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<tr>
<td>239-180</td>
<td>C</td>
<td>79-65%</td>
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<tr>
<td>179-150</td>
<td>D</td>
<td>64-50%</td>
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<tr>
<td>149-0</td>
<td>F</td>
<td>Below 50%</td>
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**Schedule of Lectures, Readings & Labs**

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<thead>
<tr>
<th>Week</th>
<th>Lecture Topics</th>
<th>Reading</th>
<th>Lab</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction, Chemistry</td>
<td>Ch. 1-2</td>
<td>Scientific Method</td>
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<tr>
<td>2</td>
<td>Molecules to Cells</td>
<td>Ch. 3 + Handout</td>
<td>Microscopy 1</td>
</tr>
<tr>
<td>3</td>
<td>Cellular Processes</td>
<td>Ch. 3 + Handout</td>
<td>Histology to organ Systems</td>
</tr>
<tr>
<td>4</td>
<td>Ecology, Classification</td>
<td>Ch. 6-7</td>
<td>Populations &amp; Demography</td>
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<td>5</td>
<td>Classification, <strong>Exam-1</strong></td>
<td>Ch. 7</td>
<td>Single Cells</td>
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<td>6</td>
<td>Protists, Porifera</td>
<td>Ch. 8,9</td>
<td><strong>Lab Practical 1</strong></td>
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<td>7</td>
<td>Cnidarians, Acoelomates</td>
<td>Ch. 9, 10</td>
<td>Invertebrates 1</td>
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<td>8</td>
<td>Pseudocoelomates, Molluscs</td>
<td>Ch. 11, 12</td>
<td>Invertebrates 2</td>
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<tr>
<td>9</td>
<td>Worms!, Arthropods</td>
<td>Ch. 13, 14</td>
<td>Invertebrates 3</td>
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<td>10</td>
<td>Myriapods, Hexapods, Echinoderms, Ch. 15, 16</td>
<td><strong>Lab Practical 2</strong></td>
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<tr>
<td>11</td>
<td>Hemichordata <strong>Exam-2</strong></td>
<td>Ch. 17</td>
<td>Fish</td>
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<tr>
<td>12</td>
<td>Fish</td>
<td>Ch. 18</td>
<td>Herps</td>
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<tr>
<td>13</td>
<td>Amphibians &amp; Reptiles</td>
<td>Ch. 19, 20</td>
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<td>14</td>
<td>Birds</td>
<td>Ch. 21</td>
<td>Mammals</td>
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<td>15</td>
<td>Mammals</td>
<td>Ch. 22</td>
<td>Ecology &amp; Behavior</td>
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<td>16</td>
<td><strong>Comparisons Exam-3</strong></td>
<td>Ch. 23</td>
<td><strong>Lab Practical 3</strong></td>
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