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 103

COURSE TITLE: Principles of Zoology

ESTIMATED NUMBER OF SECTIONS:
Fall: 1
Spring: 0

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

☐ Certification ☒ 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 103 lecture course student learning outcome alignment with diversification hallmarks (DB1-3) is shown here. Note that most of the SLOs for this course address multiple diversification areas directly.

**Lecture Learning Objectives and Course Competencies (Student Learning Outcomes):**

Students will be able to:

- a. Describe the basic concepts of chemistry and organic chemistry and their importance in living systems;
- b. Describe 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, glands and membranes, 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 ones interpersonal skills by developing a collaborative presentation/report;
- j. Evaluate information from sources, interpret the data, assimilate the information, and critically assess the value of that information;

DB.1 uses the terminology of the biological sciences. The course SLO's addressing this area are:

With the exception of "i" above, all the learning objectives/SLO's above reflect are fundamental concepts of zoology as a sub-discipline of biology, and presentation in this course REQUIRES precise and accurate terminology.

DB.2 involves knowledge and theories relating to processes in the biological sciences:

With the exception of "i" above, all the learning objectives/SLO's above reflect are fundamental concepts of zoology as a sub-discipline of biology and are presented as such.

DB.3 demonstrates inquiry that is guided by observation/experiment and reasoning/mathematics:

Items "b", and "j" directly demonstrate applications of the scientific method. All other SLO/learning-objectives (with the exception of "i") necessarily rely solely on the scientific method as their only method of discovery and development of the concept specifically and discipline of zoology in general.

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 lecture exams, active participation in class discussions, and four or more quizzes. Students are given a pre-test during the first day of class with both general and course-specific questions that appear on subsequent quizzes and exams. Both of these assessments are alligned with intended student learning outcomes and course competencies at the end of the semester. As most of the course successively considers individual phyla and orders of animals (see lecture/topic schedule in syllabus) student's ability to demonstrate, discuss or identify the concepts outlined above (SLO a-j) is assessed throuought the course with taxonomic groups. For example students will identify the structures, ecology and tissue types (SLO c-e) for nematodes in activities and exams in the second part of the course, and be required to demonstrate the same competencies for vertebrates in the third.

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.

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**DIVERSIFICATION BOARD DECISION:**

☑ Approved

Re-Certification Due: **59018**

☐ Not approved

If not approved, reasons for disapproval:

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Diversification Board Chair Signature: [Signature]

Date: **1/2/13**
BIOLOGY 103/103L (ZOOLOGY 101): PRINCIPLES OF ZOOLOGY

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

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 with out 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 ones 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:**
- $300-270 = A = 100-90\%$
- $269-240 = B = 89-80\%$
- $239-180 = C = 79-65\%$
- $179-150 = D = 64-50\%$
- $149-0 = F = Below 50\%$

### Schedule of Lectures, Readings & Labs

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<th>Reading</th>
<th>Lab</th>
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<td>Introduction, Chemistry</td>
<td>Ch. 1-2</td>
<td>Scientific Method</td>
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<td>2</td>
<td>Molecules to Cells</td>
<td>Ch. 3 + Handout</td>
<td>Microscopy 1</td>
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<td>3</td>
<td>Cellular Processes</td>
<td>Ch. 3 + Handout</td>
<td>Histology to organ Systems</td>
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<td>Ch. 6-7</td>
<td>Populations &amp; Demography</td>
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<td>6</td>
<td>Protists, Porifera</td>
<td>Ch. 8,9</td>
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<td>7</td>
<td>Cnidarians, Acoelomates</td>
<td>Ch. 9, 10</td>
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<td>Pseudocoelomates, Molluscs</td>
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<td>Worms!, Arthropods</td>
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<td>10</td>
<td>Myriapods, Hexapods, Echinoderms</td>
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<td>Comparisons Exam-3</td>
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