APPLICANT: G. Witteman

E-MAIL: witteman@hawaii.edu

COURSE ALPHA and NUMBER:  ZOOL141L, PHYL 141L

COURSE TITLE:  ANATOMY AND PHYSIOLOGY I LABORATORY

ESTIMATED NUMBER OF SECTIONS:
   Fall:  2
   Spring:  1

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

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?  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.

Anatomy and Physiology I Laboratory (141) course student learning outcome alignment with diversification hallmarks (DY1-3) is shown here. Note all of the SLOs for this course address multiple DY diversification areas directly. (The course has five primary laboratory SLOs numbered 1-5 below. As 141 lecture and 141 Lab are intended to be a single course (see “system course outline”) these laboratory specific SLOs are in addition to ALL the DB SLOs (“a* through “y” found in the lecture course).

**Student Learning Outcomes**
Upon successful completion of ZOOL 141L, the student should be able to:

1) Use the scientific method to design and conduct a clinical research study.
2) Describe the anatomy of the integumentary, skeletal, muscular, and nervous systems from prepared slides, models, and real and virtual animal dissections.
3) Use basic laboratory and medical equipment to evaluate functions (physiology) of the above body systems.
4) Use critical thinking to analyze and interpret clinical data.
5) Prepare a written summary of all lab activities that reflects use of the the scientific method

**Alignment with DY1-3**

DY.1 uses the laboratory methods of the biological sciences. The course SLO’s addressing this area are:

2) Describe the anatomy of the integumentary, skeletal, muscular, and nervous systems from prepared slides, models, and real and virtual animal dissections.
3) Use basic laboratory and medical equipment to evaluate functions (physiology) of the above body systems.

DY.2 Involve processes and issues of design, testing, and measurement in the biological sciences;

4) Use critical thinking to analyze and interpret clinical data.
5) Prepare a written summary of all lab activities that reflects use of the the scientific method.

DY.3 demonstrates the strengths and limitations of the scientific method.

1) Use the scientific method to design and conduct a clinical research study.

*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.

Laboratory practical exams, active participation in lab activities, laboratory journal documenting lab activities (with results, analysis and summary/discussion).

DY1 topics are assessed with laboratory exams. Students use laboratory equipment and tools appropriately to identify and record what they see.

DY2 topics are assessed by their laboratory journals. Content reflects proper use of the scientific method, recording procedures, and ability to follow directions.

DY3 is assessed throughout every laboratory period in student activities and approaches to exercises and assignments.
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.

As an instructor of A&P I and II courses for over 14 years (at three universities), I have conducted multiple “assessment – change – improvement” cycles. I presented the efforts from this course design and modification effort at a WASC-senior accreditation conference (2003) to unanimously positive feedback, and was the first anatomy professor at the University of Guam to have 100% of my anatomy students pass the NCLEX board licensure exam on their first attempt. My teaching methods and the course materials should be considered “mature” (in need of little continued modification).

I maintain and update lecture and instructor materials EVERY SEMESTER to include medical advances or changes in the industry, and assist new instructors with delivery and methods of improving student outcomes while maintaining necessarily (externally determined) high standards. I Plan to continue class/course assessment with review of outcomes to insure parity with national standards and that outcomes are consistent with previous semesters. (G. Witteman)
DIVERSIFICATION BOARD DECISION:

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

☐ Not approved
If not approved, reasons for disapproval:

Diversification Board Chair Signature: _[Signature]_
Date: 2/18/13
**ZOOGY/PHYSIOLOGY 141/141L:**
**HUMAN ANATOMY AND PHYSIOLOGY I**

<table>
<thead>
<tr>
<th>Instructors: Dr. G. Wittman</th>
<th>Office: 5-101B Phone: 847-9847</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Times: W. Lecture 1130-1245, Lab Th 1000-1250</td>
<td>web: links to material through U.H. Iaulima</td>
</tr>
<tr>
<td>Classroom: 5-105</td>
<td>E-mail: <a href="mailto:witteman@hawaii.edu">witteman@hawaii.edu</a></td>
</tr>
<tr>
<td>Student study sessions/tutoring: Bld. 5-105, M – Th:</td>
<td>F by aptmt.</td>
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</tbody>
</table>

**COURSE DESCRIPTION:** This is an introductory Anatomy and Physiology for biology and health science majors. This course is a requirement for the Physical Therapy Assistant and Nursing degree programs at UH Manoa and Kapiolani. The topics covered in the course are: Scientific approaches, life characteristics, and the following organ systems: Integumentary, Skeletal, Muscular, and Nervous. This course consists of complimentary lecture and laboratory sections designed to be taken concurrently at HCC. Because of this, taking lecture or laboratory classes separately is strongly discouraged.

Zoology/Physiology 141/141L is the first semester of the two-semester introductory anatomy and physiology course series for life-science majors. The lecture course fulfills the University of Hawaii Community Colleges’ Natural Science requirement for the A.A. and A.S. degrees and the University of Hawai‘i at Manoa, General Education Requirements for Diversification, Natural Sciences, Biological Sciences (141; DB; 3 credits). The laboratory portion of this course sequence (141L) fulfills laboratory diversification requirements (DY; 1 credit).

**Required Text & Materials:**
Human Anatomy and Physiology, Elaine N. Marieb & Katja Hoehn
Flashdrive (4gig or more), internet access

**Additional Learning Resources:**
In addition to the text and your lecture notes, there will be a variety of supplemental materials available through the course website and on the classroom’s workstations. This will include practice quizzes, lecture outlines, concept and keyword lists, images of specimens and lecture summaries.

**Methods of Evaluation:**
As the course material is the same in lecture and lab, you will receive the same letter grade for both. The Lecture is weighted as 75% of the overall grade (75%) and the lab counts for 25% (25%) of your grade. Your final grade will be based on the total number of points that you receive out of a possible 400 points. If you are only taking the lecture or lab portions of the class you will be graded accordingly. (As students attempting to take only one of the courses have had poor outcomes, it is **strongly** recommended to take both lecture and lab concurrently at HCC).

For the lecture’s 300 course points there will be 3 lecture exams worth 75 points (225 points total) and 5 lecture quizzes or assignments worth 15 points (75 points total). For the 100 points possible in lab, there will be three lab practical examinations worth 25 points each (75 points total) and 5 lab quizzes or exercises worth 5 points each (25 points total).

Full-credit makeup exams will only be given for documented illness or accident (i.e.: you must have a doctor’s excuse or a copy of an official document such as a police report). If you miss an examination for any other reason you must complete the makeup exam within a week and you will only be able to earn a maximum of 70% of the points. Makeup quizzes for unexcused absences will only be worth 10 points maximum (50%). If you score less than a passing grade or are absent for any quiz, exam, or exercise YOU MUST COMPLETE A MAKEUP QUIZ OR ASSIGNMENT WITH A PASSING GRADE TO RECEIVE A FINAL GRADE FOR THE COURSE. There is no extra credit of any kind.

**WITHDRAWAL ("W" grade):** If you decide to withdraw from the course, the paperwork must be completed by the LAST DAY FOR ALL WITHDRAWALS, which can be found on the HCC academic calendar. I will sign withdrawals only in cases of extreme or unusual circumstances. Grade-related excuses are unacceptable. If you simply disappear without withdrawing, you will receive an F for the course. Withdrawals after the designated time will be allowed by the college only in cases of extreme circumstances and will be administratively reviewed for accuracy and validity. Examples are a certified medical reason or a death in the immediate family.

**INCOMPLETE ("I" grade):** A "Request for Incomplete" form must be presented prior to the last day of instruction. An "I" grade will only be given to students who are achieving passing grades and who are very close to completing the course. In addition, a student must have a very good reason for not being able to complete the work or test on time.
**Online quiz and test option:**
For some of the quizzes you will be given the option of averaging in your online practice tests and your in-class scores for quizzes (details will be given in class).

**Points needed for letter grades:**
360-400 = A = 90-100%  
320-359 = B = 80-89%  
280-319 = C = 70-79%  
240-279 = D = 60-69%  
0-239 = F = <60%

**Zoology 141/141L Schedule of Lectures, Exams & Readings**

Fall 2012, (Tentative schedule, subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture Topics</th>
<th>Reading</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 20</td>
<td>Overview, Orientation, Chem. review</td>
<td>Ch. 1, 2</td>
<td>Orientation Measurement &amp; documentation</td>
</tr>
<tr>
<td>2</td>
<td>Aug. 27</td>
<td>Chem. &amp; Cellular processes</td>
<td>Ch. 2, 3</td>
<td>Microscopy</td>
</tr>
<tr>
<td>3</td>
<td>Sep. 3*</td>
<td>Cells, Histology, Quiz 1</td>
<td>Ch. 4</td>
<td>Histology Lab</td>
</tr>
<tr>
<td>4</td>
<td>Sep. 10</td>
<td>Histology, Integumentary</td>
<td>Ch. 5</td>
<td>Skeletal 1 Lab</td>
</tr>
<tr>
<td>5</td>
<td>Sep. 17</td>
<td>Skeletal: Histology, Axial,</td>
<td>Ch. 6, 7</td>
<td>Skeletal 2</td>
</tr>
<tr>
<td>6</td>
<td>Sep. 24</td>
<td>Skeletal: Appendicular, Joints, <strong>Exam-1</strong></td>
<td>Ch. 7, 8</td>
<td>Skeletal Features and Joints</td>
</tr>
<tr>
<td>7</td>
<td>Oct. 1</td>
<td>Muscular: Histology</td>
<td>Ch. 9</td>
<td><strong>Lab Practical 1</strong></td>
</tr>
<tr>
<td>8</td>
<td>Oct. 8</td>
<td>Muscular: Head/Neck,</td>
<td>Ch. 10</td>
<td>Muscular 1</td>
</tr>
<tr>
<td>9</td>
<td>Oct. 15</td>
<td>Muscular: Torso, Appendages</td>
<td>Ch. 10, 11</td>
<td>Muscular 2 Lab</td>
</tr>
<tr>
<td>10</td>
<td>Oct. 22</td>
<td><strong>Exam-2</strong>, Nervous: Histology, Overview</td>
<td>Ch. 11</td>
<td>Muscular 3</td>
</tr>
<tr>
<td>11</td>
<td>Oct. 29</td>
<td>CNS: Brain (&amp; Cranial Nerves/PNS)</td>
<td>Ch. 12</td>
<td><strong>Lab Practical 2</strong></td>
</tr>
<tr>
<td>12</td>
<td>Nov. 5</td>
<td>CNS: Spinal Quiz 4</td>
<td>Ch. 12, 13</td>
<td>Brain, CNS</td>
</tr>
<tr>
<td>13</td>
<td>Nov. 12*</td>
<td>PNS: Pathways, Sensory &amp; Motor Func.</td>
<td>Ch. 13</td>
<td>CNS 2, PNS, Lab E/Q 4</td>
</tr>
<tr>
<td>14</td>
<td>Nov. 19</td>
<td>ANS, Quiz 5</td>
<td>Ch. 14</td>
<td>PNS</td>
</tr>
<tr>
<td>15</td>
<td>Nov. 26</td>
<td>Special Senses</td>
<td>Ch. 15</td>
<td>Special Senses</td>
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<tr>
<td>16</td>
<td>Dec. 3</td>
<td>Special Senses 2</td>
<td>Ch. 15</td>
<td><strong>Lab Practical 3</strong></td>
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*Readings for the week are to be completed BEFORE CLASS.*

* Monday Holidays (no class).
Lecture Student Learning Outcomes
Upon successful completion of PHYL/ZOOL 141, the student should be able to:

a. Describe the planes, cavities, and gross anatomy of the human body
b. Identify by name, the required anatomical structures of the body and the various systems studied in this semester
c. Discuss the negative and positive feedback process involved in regulating body systems
d. Relate chemical and biological knowledge to the function of the human body and other living organisms
e. Determine bond types using the periodic table and tables of electro-negativity
f. Analyze the structure and function of the cell and its interactions with the environment and the body systems
g. Explain the gross and cellular physiology of the body systems
h. Recognize the four major tissue types and the unique contribution of each of these tissues to the organization and function of the human body
i. Identify components of the integumentary system.
j. Describe the functions of integumentary structures
k. Identify components of the skeletal system
l. Explain the development, growth and repair of skeletal structures
m. Distinguish the various classes of Articulations
n. Identify the major skeletal muscles of the body
o. Describe origins, insertions, and actions of specific muscle groups
p. Characterize the mechanism of muscle contraction
q. Explain the regulation of muscle contraction and coordinated movements
r. Distinguish between aerobic and anaerobic processes in exercise
s. Identify the major neural tissues
t. Characterize the events of an action potential and Transmembrane potentials
u. Describe the organization of the spinal cord and somatic reflexes
v. Describe the major brain regions and their functions
w. Identify and interpret the major cranial and spinal reflexes
x. Calculate and interconvert values for measurements, concentrations, and rates as appropriate
y. Analyze and Interpret graphic materials
z. Measure various physical and chemical aspects of animal physiology

Laboratory Student Learning Outcomes
Upon successful completion of PHYL/ZOOL 141L, the student should be able to:

1) Use the scientific method to design and conduct a clinical research study.
2) Describe the anatomy of the integumentary, skeletal, muscular, and nervous systems from prepared slides, models, and real and virtual animal dissections.
3) Use basic laboratory and medical equipment to evaluate functions (physiology) of the above body systems.
4) Use critical thinking to analyze and interpret clinical data.
5) Prepare a written summary of all lab activities that reflects use of the scientific method