Zoology 141L  Anatomy and Physiology Laboratory Section
One (1) Credit  CRN 63044
Tuesdays 11:30 a.m. to 2:15 p.m., 103 Imiloa

INSTRUCTOR:  Allison Beale
OFFICE:  118 Imiloa
OFFICE HOURS:  TBA
TELEPHONE:  Please use email  EMAIL: abeale@hawaii.edu
EFFECTIVE DATE:  Fall 2016

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

This is the laboratory meant to accompany the lecture in Zoology 141. The lab reinforces major concepts of human anatomy and physiology through dissections, examination of models, laboratory experiments, and other hands-on activities. This course is intended for students entering health care or other medically related fields such as nursing, physical therapy and medical technology. (3 hours of lab).

Activities Required at Scheduled Times Other Than Class Times

None.

STUDENT LEARNING OUTCOMES

The course student learning outcomes (SLOs) are:

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, skeleton models and real and virtual animal dissections.

3. Use basic laboratory equipment (microscopes, slides, and dissecting tools) to observe and characterize human tissues.

4. Use critical thinking to analyze and interpret clinical data.

5. Prepare an oral presentation and written summary of lab activities using the scientific method.
COURSE CONTENT

Concepts or Topics (the terms, topics, or concepts students should know or understand)

• Scientific method
• Chemistry including biochemistry related to osmosis, diffusion, metabolism and respiration.
• Homeostasis
• Anatomical terms
• Cell anatomy and physiology
• Organ system anatomy and physiology
  o Fat (adipose tissue)
  o Skeletal (bone, cartilage and joints)
  o Muscle, including origins and insertions of major muscles.
  o Nervous and sensory
  o Cardiovascular
  o Respiratory
  o Digestive system
  o Endocrine
  o Blood and Lymphatic systems
  o Urogenital system
• Tissue anatomy and physiology
  o Connective
  o Epithelial
  o Muscular
  o Nervous

Skills or Competencies (what students should be able to do in order to complete the student learning outcomes)

1. Identify the anatomy of major organ systems;
2. Explain the physiology of major cell types;
3. Explain the physiology of major tissues;
4. Explain the physiology of major organs.
5. Identify the major cellular components of major tissues and organs.
6. Use the “tools of the trade” appropriately, including microscopes, dissection tools, and microscope slides.
7. Interpret visual, hands-on materials, including slides, models and virtual dissections into an oral and written presentation and lab notebook.
8. Interpret visual, hands-on materials and data into clinical profiles.

COURSE TASKS

1. Attend class at scheduled times, not arriving late or leaving early without prior consent of instructor.
2. Participate in all lab activities, including:
   a. Making yourself familiar with all lab safety procedures
   b. Taking appropriate precautions at all times to ensure your own safety and the safety of others and the environment
      i. Know the locations of important safety equipment and the fundamentals of their use including:
         1. Eyewash stations
         2. Safety shower(s)
         3. Fire extinguisher
         4. First Aid kit
         5. Who to summon in the event of an accident or emergency
c. Follow instructions

d. Dress appropriately for lab
   i. Closed toed shoes are REQUIRED
      1. You will not be allowed to participate in lab without closed-toed shoes.
   ii. A lab coat or other appropriate coverage is REQUIRED
      1. Lab coats may be purchased from the Book Store
   iii. Safety glasses and gloves are REQUIRED for any lab using chemicals, hot-plates or which may expose you or others to body fluids.
      1. Safety glasses and gloves are provided in the lab.

e. Report any chemical spills, broken glassware or other hazardous situations immediately to the instructor
   i. Place all broken glass, sharps and dissected specimens in the appropriate receptacles, NOT IN THE TRASH.
   ii. All tissues and body fluids, human or otherwise, including saliva, blood, or other tissues, must be disposed of in the appropriate bio-hazard container, NOT IN THE TRASH.
   iii. Wash your lab bench down after lab using paper towel and spray cleaners provided in lab.

f. Chemicals used in lab may be poisonous, corrosive or flammable.
   i. Do not ingest any chemical, even those known to be safe, in the lab.
   ii. Do not touch any chemical in the lab without wearing gloves unless specifically instructed by your instructor to do so.
   iii. Unless otherwise instructed, chemical wastes should NOT GO DOWN THE DRAIN.
   iv. **DO NOT CONSUME FOOD OR BEVERAGES IN LAB.**
      1. Do not bring food or beverages of any kind into the lab.
      2. Do not apply cosmetics in lab.
   v. Again: **NO FOOD OR BEVERAGES ALLOWED IN THE LAB!**

g. Know how to safely use and operate all lab equipment and tools, including:
   i. Microscopes
   ii. Glass microscope slides
   iii. Hematology supplies
   iv. Scalpels and other dissection tools

h. **Treat all organisms, living or dead, with care and respect.**
   i. Always handle dissection specimens with gloves.
   ii. Wash your hands, even if you have been wearing gloves, after handling dissection specimens.

i. **Clean all lab supplies and return them to their proper location before leaving lab.**

j. **WASH YOUR HANDS immediately following lab to reduce the possibility of infection or contamination.**

3. Record results of lab activities in a lab notebook.
   a. Number, prior to the start of class, all the pages of your lab notebook (use a bound composition book) using a pen (not a pencil). You may use a 3-ring binder.

4. Complete weekly quiz if scheduled.

5. Complete 2 in-class practical exams.

6. Present (orally and in writing) results of lab activities.
ASSESSMENT TASKS AND GRADING

Quizzes – one per week, approximately 12 total. 10 points each quiz, for an approximate total of **120 points**.

Quizzes cover:
1. Material from lab.
2. Quizzes may be administered before or after a lab is completed to make sure you have studied BEFORE coming to lab.

Practical Exams – two in-class practical exams. 100 points each, for a total of **200 points**.

Practical exams cover:
1. Anatomy (gross and cellular) and physiology (function) of major systems covered in lab.
2. The final may be cumulative!

Lab Notebook – submitted once, worth **100 points**.

Lab Reports – ONE written lab report, on Osmosis, worth **50 points**.

Participation and attendance – Attendance is mandatory.

- Each student is allowed one absence without penalty. The second unexcused absence, late arrival or early departure will result in a deduction of 50 points from the student’s attendance “bank”. The “bank” consists of **100 points**.
  - Only a valid MEDICAL excuse is allowed, for you or an immediate family member. If submitting a valid medical excuse, it must be turned in during the NEXT lab otherwise attendance points will be deducted. See the attendance tool in Laulima to keep track of your attendance.
  - Make up labs are not an option, so two unexcused absences will result in a failing grade (an “F”).

- Some labs involve non-invasive clinical measurements (such as skin-fold measurements or reflex testing). If you have a health condition or other reason why you should not be required to participate in these activities, you must notify the instructor. Experiments involving invasive or semi-invasive procedures will be performed on volunteers only. Such procedures may include finger sticks and urinalysis.

NOTE: All assignments are due ON or BEFORE the due date (at the START of lab on the due date). The following are NOT ACCEPTED:
1. Late assignments
2. eMailed work
3. Work left in my office or mailbox.
Extra Credit – Approximately 65 EC points will be made available. ALL EC consists of completing (100% COMPLETE) the review questions found at the end of each lab in the lab book.

1. Must be 100% COMPLETE
2. NEAT and COMPLETE (make sure you actually answer the questions!)
3. Due at the start of the NEXT lab
   a. Absolutely no late work for ANY reason, excused or otherwise.
   b. If you arrive AFTER THE START of class, your EC will not be counted.
   c. If your EC is not 100% complete and neat, your EC will not be counted.
   d. There are no partial points awarded for EC, it is all or nothing.
4. It is the student’s responsibility to know which questions are available that week for EC.
   a. If we do more than one lab exercise from the book, then more than one set of questions may need to be completed (100%) to get the EC for that week.

Total points for the course: Approximately 570.
Total optional, EC: Approximately 65 points.

LEARNING RESOURCES


Laulima: https://laulima.hawaii.edu/portal. Students need a UH email account and access to a computer (available in Imiloa and the WCC Library Learning Commons). Laulima hosts a webpage for our course where you will find additional resources including, guidance and instructions, updates, announcements, links to lab activities and the Extra Credit materials.
LAB ATTIRE, CONDUCT AND HYGEINE
1. Biology labs often involve the use of chemicals, including potentially hazardous materials, and potentially dangerous equipment, including sharps such as scalpels and glassware.
   a. Therefore students MUST wear:
      i. Closed toe shoes
      ii. A lab coat
      iii. And may be required to wear safety glasses and/or protective gloves or other protective equipment.
   b. Therefore students MUST adhere to a strict code of conduct.
      i. Any student engaging in conduct that threatens the safety of themselves or others in lab will be expelled from class and receive an “F” grade for the course.
2. Some lab activities involve body measurements (such as body fat determination through skin fold analysis), light exercise, or the placement of electrodes or sensors on the body. Therefore, students should wear:
   a. Loose-fitting clothing that allows for a free range of movement
   b. Students failing to wear appropriate clothing will not be allowed to participate in lab exercises and will be considered absent for the day.
3. Some lab activities involve contact with chemicals as described in #1 above, other students, as described in #2 above, or with biological fluids during dissections. Therefore, students should:
   a. Maintain a clean lab bench, free of excess personal belongings;
   b. Promptly clean up any spills;
   c. NEVER bring food or beverages into the lab;
   d. ALWAYS WASH YOUR HANDS at the end of lab.

STUDENT CONDUCT
• ANY student who engages in behavior or language inconsistent with accepted codes may be subject to academic disciplinary action. Please review the following policies if you have any question about what constitutes appropriate behavior. Absolutely not tolerated will be swearing, racist or sexist speech or behavior meant to intimidate any person in class. All UH policies may be found online at http://www.hawaii.edu/policy/?action=search
  o EP 1.204 – Sexual Harassment and Sexual Assault
  o EP 7.205 – System-wide Student Disciplinary Sanctions
  o EP 7.208 – System-wide Student Conduct Code

ACADEMIC DISHONESTY
• Any student involved in academic dishonesty will receive an “F” grade for the course.
  o Academic dishonesty includes, but is NOT LIMITED to:
    ▪ Cheating on exams, or helping someone else cheat
    ▪ Plagiarism
  o See the current WCC Course Catalog for a description of the College’s policies concerning academic dishonesty.
DISABILITIES ACCOMMODATION STATEMENT

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale 'Akoakoa 213 for more information.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Reading</th>
<th>EC – 100% complete</th>
<th>Points</th>
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<tr>
<td>8/23</td>
<td>Lab Introduction and Lab Safety Language of Anatomy</td>
<td>Syllabus Exercise 1</td>
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<td>8/30</td>
<td>Organ System overview (no dissection) Language of Anatomy Quiz</td>
<td>Exercise 2 Language of Anatomy Review Sheet</td>
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<td>9/6</td>
<td>The Microscope Cell Anatomy and Division (note: no scientific method)</td>
<td>Exercise 3 Exercise 4 Ex 2 Review</td>
<td>5 EC</td>
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<td>9/13</td>
<td>Cell Transport Mechanisms: Osmosis and Diffusion Cell Anatomy and Division Quiz</td>
<td>Exercise 5 Ex 3 &amp; 4 Review</td>
<td>5 EC</td>
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<td>9/20</td>
<td>Classification of Tissues Osmosis quiz</td>
<td>Exercise 6 Ex 5 Review</td>
<td>5 EC</td>
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<td>9/27</td>
<td>The Integumentary System Body Size &amp; Composition Classification of Tissues Quiz Osmosis report due – 50 points</td>
<td>Exercise 7 Ex 6 Review</td>
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<td>Bone Tissue &amp; Axial Skeleton The Integumentary System Quiz</td>
<td>Exercise 8 Exercise 9 Ex 7 Review</td>
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<td>Appendicular Skeleton Joints: Articulations and Body Movements Skeleton (entire) quiz</td>
<td>Exercise 10 Exercise 11 Ex 8 &amp; 9 Reviews</td>
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<td>10/18</td>
<td>Lab Practical #1 (up to joint movements) – 100 points Lab notebooks due – 100 points</td>
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<td>Muscle Tissue Gross Anatomy and Classification of Muscles I Muscle Tissue Quiz</td>
<td>Exercise 12 Exercise 13 Ex 10 &amp; 11 Reviews</td>
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<td>Gross Anatomy and Classification of Muscles II Muscles Quiz</td>
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<td>Human Reflex Physiology General Senses Reflexes Quiz</td>
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<td>Lab Practical #2 – 100 points Attendance – 100 points eCafe</td>
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Total points: 570

570 points