

## **ANSC 151 Clinical Laboratory Techniques**

Number of Credits: 3 (CRN 60090/60277)

Wed/Thu: 10:00-11:15/11:30-12:45

**INSTRUCTOR:** Sam Geiling, RVT

**OFFICE:** Hale Kako'o 128

**TELEPHONE:** 271-7883 (cell)

**EFFECTIVE DATE:** Spring 2019

**OFFICE HOURS:** In Palanakila 102:

**Wed 9:00-10:00 Thu 1:00-2:00** (or by appt.)

**EMAIL:** scraddoc@hawaii.edu

### **WINDWARD COMMUNITY COLLEGE MISSION STATEMENT**

'O keia ka wā kūpono e ho'onui ai ka 'ike me ka ho'omaopopo i kō Hawai'i mau ho'oilina waiwai. Aia nō ho'i ma ke Kulanui Kaiāulu o ke Ko'olau nā papahana hou o nā 'ike 'akeakamai a me nā hana no'eau. Me ke kuleana ko'iko'i e ho'ohiki ke Kulanui e kāko'o a e ho'okumu i ala e hiki kē kōkua i ka ho'onui 'ike a nā kānaka maoli. Na mākou nō e ho'olako, kāko'o a paipai i nā Ko'olau a kō O'ahu a'e me nā hana no'eau ākea, ka ho'ona'auao 'oihana a me ka ho'onui 'ike ma ke kaiāulu — hō'a'ano a e ho'oulu i nā haumāna i ka po'okela.

*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 the Ko'olau region of O'ahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

### **CATALOG DESCRIPTION**

Provides students with the background knowledge needed to perform and interpret laboratory techniques commonly used in veterinary practice. Topics include: Homeostatic relationships, cytology, histology, parasitology and clinical physiology of major body systems. Includes a discussion of common disorders affecting major body systems and the techniques used for diagnosis. This course is intended for students entering veterinary technology, veterinary assisting or other animal-related fields.

### **STUDENT LEARNING OUTCOMES**

The student learning outcomes for the course are:

- Describe the procedures for safely collecting specimens from domestic animals
- Discuss the clinical tests performed in hematology, urinalysis, clinical chemistries, and cytology
- Compare the technologies used by automated hematology and blood chemistry machines and discuss their impacts on the accuracy and reliability of test results
- Recognize accurate vs. erroneous results in order to provide maximum diagnostic benefit

### **LEARNING RESOURCES**

1. Margi Sirois, Laboratory Procedures for Veterinary Technicians, 6<sup>th</sup> edition, St. Louis, MO, Mosby Inc, 2014.
2. Reagan, William, et al. Veterinary Hematology: Atlas of Common Domestic and Non-Domestic Species, 2<sup>nd</sup> edition, Ames, IA, Wiley-Blackwell, 2008 (ISBN-13: 978-0-8138-2809-1)
3. *OPTIONAL:* Voigt, Gregg and Swist, Shannon, Hematology Techniques and Concepts for Veterinary Technicians, 2<sup>nd</sup> edition, Hooken, NJ, Wiley-Blackwell, 2011. (ISBN: 978-0-8138-1456-1)

## COURSE TASKS

- 1) Attend lectures, on time
- 2) Complete assigned readings **prior to** the lectures
- 3) Participate in class discussions
- 4) Complete 10 quizzes
- 5) Complete 3 examinations and 3 Exam Reviews

## ASSESSMENT TASKS AND GRADING

**ATTENDANCE:** 10 points – Attendance will be taken at the beginning of each class period. Both tardiness and early departure from class are considered forms of absenteeism. Students are **NOT entitled to any unexcused absences and will be docked 10 points for an absence.** If a student has an emergency or is too ill to come to class, the instructor should be notified via email prior to class. A doctor's note or documentation of extenuating circumstances will be required within 48 hours of the absence. Students with more than 5 absences, excused or unexcused, may have points deducted or receive an "F" grade in the class. For absences due the observance of religious holidays, jury duty, and for calls to active duty, students must confer with the instructor prior to the absence. Students absent from class for any reason are still responsible for all work missed. In the event of severe weather or other emergency, students are expected to check-in via Laulima for instructor updates. Students who stop attending class, but do not formally withdraw, may receive an "F" grade and face financial aid repercussions in future semesters as a result.

**CASE STUDY:** 50 points – Students will be required to create a case study for the class. The format for the case study will be discussed in class.

**GROUP WORK:** 30 points - Students will work in assigned groups to complete closed-book quizzes.

**QUIZZES:** 100 points total – Students should expect a quiz many class periods and are expected to keep up with the material and be prepared every class. Each quiz is worth 10 points.

**EXAM REVIEWS:** 30 points total – Students are expected to complete reviews prior to each exam. Each review is worth 10 points.

Instructions: each student will write **10 questions** with the CORRECT answers from the chapters for the upcoming exam, **post it** to Laulima under resources, and **bring one copy** to my class the class period BEFORE the REVIEW.

**LAB MANUAL ASSIGNMENTS:** 30 points - Complete the Lab Manual that accompanies the textbook. (We will NOT complete the parasitology section.) 5 points for each section.

Intro to Lab - Urinalysis (Jan 31) - Hematology - Hemostasis (March 7) - Clin Chem - Cytology (May 1)

**EXAMINATIONS:** 350 points total – Exam 1 is worth 50 points, Exam 2 is worth 100 points and the Final Exam is cumulative and will be worth 200 points.

<b>Attendance</b>	<b>10</b>
<b>Case study</b>	<b>50</b>
<b>Group</b>	<b>30</b>
<b>Quizzes</b>	<b>100</b>
<b>Exam Review</b>	<b>30</b>
<b>Lab Manual</b>	<b>30</b>
<b>Exams</b>	<b>350</b>

<b>Points</b>		<b>Letter</b>
537-600	90-100%	<b>A</b>
475-536	80-89%	<b>B</b>
417-474	70-79%	<b>C</b>
357-416	60-69%	<b>D</b>
0-356	0-59%	<b>F</b>

**Total**                    **600**

## ADDITIONAL INFORMATION

### Student Resources

**Ka Piko** is WCC's academic support hub. Please visit: <https://windward.hawaii.edu/kapiko/>

**TRiO student support services:**

[https://windward.hawaii.edu/TRIO/Student\\_Support\\_Services.php](https://windward.hawaii.edu/TRIO/Student_Support_Services.php)

**MySuccess:** Students may be referred for extra help or advising through MySuccess. Students can also explore resources at MySuccess.Hawaii.edu and [windward.hawaii.edu/MySuccess](https://windward.hawaii.edu/MySuccess)

**Quizzes** will be given at the start of class and take about 5-10 minutes. If you are late, you will not be allowed to take the quiz.

If you miss an exam or quiz due to a **serious illness or legitimate emergency**, you **must** contact the instructor **within 48 hours** to arrange a time to take a make-up exam/quiz. You may need to provide a doctor's note. The make-up exam may not be the same exam that was given to other students and will need to be taken at the WCC Testing Center within a timeframe agreed upon by the instructor and student.

The instructor may request that the student present evidence of the illness or emergency that caused the student to miss the exam. If the student misses an exam for any other reason, the student may be prohibited from taking a make-up exam, thus failing to receive any points for the missed exam. While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different.

## HOW TO SUCCEED IN THIS COURSE

- 1) Science courses at WCC generally require a minimum of 3 hours of independent study for **each** hour of class; therefore you should expect to spend **9 hours per week studying OUTSIDE of class** to fully understand the complexities of the wide range of information presented in this class.
- 2) Although you can download the lecture PowerPoint outlines and read the textbook, you will not succeed in this class without attending the lecture and taking notes on the corresponding material in the textbook. You need to **study** this material.
- 3) This class covers a variety of clinical laboratory techniques that requires a good understanding of animal anatomy and physiology. You may need to review your physiology textbook and class notes to fully understand how to use and apply diagnostic laboratory tests.
- 4) Form effective study groups with your classmates. Come prepared, meet on a schedule, change up the format. If you'd like more guidance on study groups, please ask.

## SCHEDULE & READING ASSIGNMENTS

Required readings in *Laboratory Procedures for Veterinary Technicians* by Margi Sirois are indicated on the schedule below, in the hematology section RB means chapters in the red book (Veterinary Hematology.) Information from the assigned readings may be tested on quizzes or examinations. Everything covered in the lecture -- even if not from the required textbook-- may be covered in quizzes or exams.

## ACADEMIC DISHONESTY

### **Students involved in academic dishonesty will receive an "F" grade for the course.**

In this class, students who commit academic dishonesty, cheating or plagiarism will have the following consequence(s):

Students will receive a failing grade for plagiarized assignments.

All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

Work submitted by a student must be the student's own work. The work of others should be explicitly marked, such as through use of quotes or summarizing with reference to the original author. Students can upload papers to <http://www.TurnItIn.com> to have papers checked for authenticity, highlighting where the paper potentially fails to appropriately reference sources.

## DISABILITIES ACCOMMODATIONS

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](mailto:lemke@hawaii.edu), or you may stop by Hale 'Ākoakoa 213 for more information.

## TITLE IX

*Title IX prohibits discrimination on the basis of sex in education programs and activities that receive federal financial assistance. Specifically, Title IX prohibits sex discrimination; sexual harassment and gender-based harassment, including harassment based on actual or perceived sex, gender, sexual orientation, gender identity, or gender expression; sexual assault; sexual exploitation; domestic violence; dating violence; and stalking. For more information regarding your rights under Title IX, please visit: [https://windward.hawaii.edu/Title\\_IX/](https://windward.hawaii.edu/Title_IX/).*

*Windward Community College is committed to the pursuit of equal education. If you or someone you know has experienced sex discrimination or gender-based violence, WCC has resources to support you. To speak with someone confidentially, contact the Mental Health & Wellness Office at 808-235- 7393 or Kaahu Alo, Designated Confidential Advocate for Students, at 808-235-7354 or [kaahualo@hawaii.edu](mailto:kaahualo@hawaii.edu). To make a formal report, contact the Title IX Coordinator, Karla K. Silva-Park, at 808-235-7468 or [karlas@hawaii.edu](mailto:karlas@hawaii.edu).*

## ALTERNATE CONTACT INFORMATION

If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

Location: Alakai 121

Phone: 808-235-7422

Email: [wccaa@hawaii.edu](mailto:wccaa@hawaii.edu)

	Date	LECTURE TOPIC	READING
<b>1</b>	W 1/9 Th 1/10	Syllabus - UNIT 1 - Safety, OSHA UNIT 1 - Lab Equipment, Microscope	Ch 1 Ch 2-3
<b>2</b>	W 1/16 Th 1/17	UNIT 1 - Metrics and Calculations, QC, Records Urinalysis - A&P kidney & sample collection	Ch 4-5 Ch 25-26
<b>3</b>	W 1/23 Th 1/24	Urinalysis - Physical, Chemical Analysis Urinalysis - Microscopic	Ch 27-28 Ch 29
<b>4</b>	W 1/30 Th 1/31	Urinalysis - Microscopic Review	<i>(Review Qs Due)</i> <i>(Lab manual due)</i> Ch 29
<b>5</b>	W 2/6 Th 2/7	<b>EXAM 1 (50 POINTS)</b> Hematology - Hematopoiesis, CBC overview	Ch 6-8 - RB: 1
<b>6</b>	W 2/13 Th 2/14	Hematology - Hgb, PCV, RBC Indices Hematology - Blood Films (normal cells)	Ch 9 Ch 10 RB: 2,5,8
<b>7</b>	W 2/20 Th 2/21	Hematology - Abnormalities (RBCs) Hematology - Abnormalities (RBCs)	Ch 11 RB: 3,4
<b>8</b>	W 2/27 Th 2/28	Hematology - Abnormalities (WBCs) Hematology - Additional Tests, Anemia	Ch 11 RB: 6,7 Ch 12-13
<b>9</b>	W 3/6 Th 3/7	Hemostasis - Coagulation Abnormalities Review	<i>(Review Qs Due)</i> <i>(Lab manual due)</i> Unit 3 (14-18)
<b>10</b>	W 3/13 Th 3/14	<b>EXAM 2 (100 points)</b> <b>Case Study Due - Presentations</b>	
	Mon-Fri 3/18-3/22	<b>~~SPRING BREAK~~</b> <b>~~HAVE FUN, BE SAFE!~~</b>	
<b>11</b>	W 3/27 Th 3/28	Clinical Chemistry - Kidney, pancreas Clinical Chemistry - Electrolytes and Acid-Base Status	Ch 33, 34 Ch 35
<b>12</b>	W 4/3 Th 4/4	Clinical Chemistry - Misc. tests Parasitology - Samples and testing	Ch 36 Ch 49, 50
<b>13</b>	W 4/10 Th 4/11	Parasitology - Roundworms, hookworms, whipworms, heartworms Parasitology - Tapeworms, protozoa	Ch 45 Ch 46,47
<b>14</b>	W 4/17 Th 4/18	Parasitology - Arthropods (fleas, ticks) Cytology - Samples, Smears	Ch 48 Ch 51, 52
<b>15</b>	W 4/24 Th 4/25	Cytology - Microscopic evaluation Cytology - Specific sites	Ch 53 Ch 54 <i>(Review Qs Due)</i>
<b>16</b>	W 5/1 Th 5/2	Review Review (last day 5/2)	<i>(Lab manual due)</i>
<b>17</b>		<b>FINAL EXAM: (200 points – cumulative)</b>	