

ANSC 151 Clinical Laboratory Techniques

3 Credits

M/T/R - 10:00-11:15 or 11:30-12:45

INSTRUCTOR: Sam Craddock, RVT

OFFICE: Hale Na'auao 121

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EFFECTIVE DATE: Spring 2015

OFFICE HOURS: Wed 12:00-4:00 (Check Iolani 116)

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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

Provides students with the background knowledge needed to perform and interpret laboratory techniques commonly used in veterinary practice. Topics include: commonly used laboratory equipment, hematology, clinical chemistry, urinalysis, internal and external parasitology of companion animal species. Will include a review of the physiology of major body systems and an overview of common diseases seen in veterinary practice. This course is intended for students entering veterinary assisting, veterinary technology or other animal-related fields.

Prerequisite: Credit for ANSC 142 and 142L. Credit for or registration in ANSC 151L.

STUDENT LEARNING OUTCOMES

- 1) Describe the procedures for safely collecting specimens from domestic animals.
- 2) Describe the procedures for routine diagnostic tests performed in domestic animals.
- 3) Compare the technologies used by automated hematology and blood chemistry machines and discuss their impacts on the accuracy and reliability of test results.
- 4) Identify internal and external parasites common to companion animal species.
- 5) Describe the functions and physiology of the digestive, endocrine, circulatory, respiratory, reproductive and urinary systems.
- 6) Discuss the clinical tests used to assess function of the above body systems and be able to distinguish normal vs. abnormal results.

COURSE CONTENT

- Commonly used laboratory equipment
- Proper collection and handling of laboratory specimens
- Laboratory safety/OSHA regulations and MSDS information
- Hematology
- Blood chemistry analysis
- Urinalysis
- Parasitology: Identification and life cycle of internal and external parasites
- Zoonotic Diseases
- Anatomy and physiology review of the circulatory, respiratory, urinary, digestive endocrine, reproductive systems as related to laboratory diagnostics

COURSE TASKS

- 1) Attend lectures, on time
- 2) Complete assigned readings **prior to** the lectures
- 3) Participate in class discussions
- 4) Complete 8 quizzes
- 5) Complete 4 examinations and 4 Exam Reviews

ASSESSMENT TASKS AND GRADING

ATTENDANCE: 20 points – Attendance is mandatory. Each student is allowed two absences without penalty. Each unexcused absence beyond two will result in a deduction of points from the student's attendance score.

QUIZZES: 80 points total – Quizzes will **not** be announced. Students are expected to keep up with the material and be prepared every class period for a quiz. Each quiz is worth 10 points.

EXAM REVIEWS: 80 points total – Students are expected to complete reviews prior to each exam. Each review is worth 20 points. Instructions: each student will write 20 questions from the chapters for the upcoming exam, post it to Lulima under resources, and bring in one copy on the class period BEFORE the REVIEW. (Example: Exam #1 is Feb 10, the review day is Feb 9, the questions are due Feb 3)

EXAMINATIONS: 500 points total – Exam 1-3 will each be worth 100 points and the Final Exam will be worth 200 points.

Attendance	20	Points		Letter
Quizzes	80	608-680	90-100%	A
Exam Review	80	540-607	80-89%	B
Exams	500	472-539	70-79%	C
		404-471	60-69%	D
		0-403	0-59%	F
Total	680			

LEARNING RESOURCES

Required Textbooks:

1. Margi Sirois, Laboratory Procedures for Veterinary Technicians, 6th edition, St. Louis, MO, Mosby Inc, 2014. (ISBN: 978-0-323-16930-1)
2. Reagan, William, et al. Veterinary Hematology: Atlas of Common Domestic and Non-Domestic Species, 2nd edition, Ames, IA, Wiley-Blackwell, 2008 (ISBN-13: 978-0-8138-2809-1)
3. Bassert, Joanna and Dennis McCurnin, McCurnin's Clinical Textbook for Veterinary Technicians, 8th edition, St Louis, MO, Saunders Elsevier, 2010. (ISBN: 978-1-4160-5700-0)
4. *OPTIONAL:* Voigt, Gregg and Swist, Shannon, Hematology Techniques and Concepts for Veterinary Technicians, 2nd edition, Hooken, NJ, Wiley-Blackwell, 2011. (ISBN: 978-0-8138-1456-1)

Additional Information

Quizzes will be given during the first 10-15 minutes of class. If you are late, you will not be allowed additional time.

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. 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.

Academic dishonesty includes cheating on exams and plagiarism. See pages 20-21 of the 2009-2011 course catalog for a description of the University'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.

ANSC 151 Course Schedule

Week	Date	Topic	Reading
1	M 1/12	Syllabus - Hematology, Hematopoiesis	Ch 6
	T1/13	Hematology – CBC overview, samples, automated analyzers	Ch 7, 8
2	M 1/19	~~MLK Jr Day~~	
	T1/20	Hematology – Hgb, PCV, RBC Indices, Blood films	Ch 9-11
3	M 1/26	Hematology – Blood Films (RBCs, WBCs, Platelets)	Ch 11
	T1/27	Hematology – Abnormalities	Ch 12
4	M 2/2	Hematology – Additional Tests, Anemia	Ch 13
	T2/3	Hemostasis – Coagulation	Ch 14-18
5	M 2/9	REVIEW	
	T2/10	Exam #1	
6	M 2/16	~~President's Day~~	
	T2/17	Urinalysis – A&P kidney, samples, 3 parts	Ch 25, 26
7	M 2/23	Urinalysis – Physical & chemical properties	Ch 27, 28
	T2/24	Urinalysis – Microscopic (procedure, cells, casts, crystals)	Ch 29
8	M 3/2	Urinalysis – Microscopic (microorganisms, misc components), urolithiasis	Ch 29
	T3/3	Clin Chem – Intro, Samples, Proteins & liver assays	Ch 30-32
9	M 3/9	Clin Chem – Kidney, pancreas assays	Ch 33, 34
	T3/10	Clin Chem – Other assays- endocrine, electrolyte, misc	Ch 35, 36
10	M 3/16	Review	
	T3/17	Exam #2	
11	M 3/23 T 3/24	~~Spring Break~~ ~~Have fun, be safe!~~	
12	M 3/30	Parasitology – Intro, classification, common nematodes, Heartworms	Specific
	T4/31	Parasitology – Heartworm diagnostics	Pages
13	M 4/6	Parasitology – Cestodes, trematodes, Acanthocephalans, Protozoa, Rickettsia	will be
	T4/7	Parasitology – Common ectoparasites	given
14	M 4/13	Review	for this
	T4/14	Exam #3	section
15	M 4/20	Toxicology (Ch 3 111-113)	228-231
	T4/21	Cytology – Sample collection, prep, staining	Ch 51, 52
16	M 4/27	Cytology – Evaluation (inflammation, neoplasia)	Ch 53
	T4/28	Cytology – Specific sites	Ch 54
17	M 5/4	REVIEW	
	T5/5	REVIEW (last day of instruction)	
FINAL		Final Exam (Cumulative, 200 points)	