

## Diagnostic Imaging for Veterinary Technicians

**ANSC 252**  
**CRN: 61074**  
**Wed 1:00-3:45**

**ANSC 252L**  
**CRN: 61075 or 61076**  
**Thu or Fri 10:00-3:45**

**INSTRUCTOR:** Sam Craddock, RVT  
**OFFICE:** Hale Na'auao 134  
**OFFICE HOURS:** Wed 11:00-1:00  
**TELEPHONE:** 808-271-7883 or 236-9107  
**EMAIL:** scraddoc@hawaii.edu  
**EFFECTIVE DATE:** Summer, 2014 (May 28-Jul 25)

### 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

**ANSC 252:** This course covers the nature and use of x-ray technology in veterinary technology. Students are also given an overview of alternative imaging techniques (ultrasound, CT scans, and digital radiography) as well as an introduction to the radiography of large animals and exotics. (3 hours lecture)

**ANSC 252L:** This lab trains students to safely and effectively use x-ray technology to obtain diagnostic radiographs of the skeletal- and soft anatomy of companion animals. (3 hours laboratory)

*Pre-Requisite(s):* Admission into the Veterinary Technology program. Students are required to show proof of current health insurance and sign a liability waiver. *Co-Requisite(s):* Concurrent enrollment in ANSC 252/252L.

### STUDENT LEARNING OUTCOMES

Upon successful completion of ANSC 252/252L, the student should be able to:

- Describe the uses and functioning of various types of medical imaging equipment.
- Implement and observe recommended radiation safety measures.
- Evaluate radiographic images for proper radiographic technique and patient positioning.
- Explain the clinical uses of alternative imaging technologies.
- Utilize radiographic equipment to expose and develop radiographic films in order to create diagnostic radiographic images.
- Properly label and file radiographic films and complete radiographic logs and reports.
- Utilize radiographic contrast agents to produce diagnostic images of urinary and GI organs.
- Perform radiographic techniques utilized in screening for canine hip dysplasia.
- Demonstrate proper maintenance and troubleshooting of radiographic equipment.
- Position companion animals safely and humanely for radiographic studies.

**Concepts or Topics**

The student will describe and integrate basic biological principles and define basic biological terms presented in lecture, required texts, and other instructional materials. These principles include the following areas:

Review of Skeletal and Soft Anatomy ID of anatomical structures from radiographs Radiation Safety OSHA and state regulations Physics of X-Ray Production Anatomy of an X-Ray Machine Exposure Factors Radiographic Quality Film & Screen Types Film Processing	Radiographic Technique Evaluation Technique Charts Quality Control Radiographic Artifacts Patient Positioning Procedures for Dx of Canine Hip Dysplasia (OFA & PENN-HIP) Use of Radiographic Contrast Agents Large Animal Radiography Avian & Exotic Radiography Alternative Imaging Techniques Digital Radiography
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**COURSE TASKS**

<b>ANSC 252</b> 1) Participate in class. 2) Complete assigned readings prior to class. 3) Complete 4 exams.	<b>ANSC 252L</b> 1) Participate in class. 2) Complete assigned readings prior to class. 3) Prepare for weekly quizzes. 4) Produce a portfolio of 10 radiographs of diagnostic quality.
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**ASSESSMENT TASKS AND GRADING**

<b>ANSC 252</b> <b>EXAMINATIONS</b> (200 points total-50 points for 2 exams, 100 points for final). The student will take three exams to demonstrate knowledge and understanding of information presented in the lectures, lab activities, and text readings. Final exam will be CUMULATIVE. <b>EXAM REVIEWS</b> (30 points total, 10 for each exam) The student will write 10 of their own questions from the reading and answer them correctly. The exam reviews are due the class period before exam. The student MUST bring one copy to class and post the questions in Lulima. <b>ATTENDANCE:</b> (40 points) Attendance is mandatory, unexcused absences will result in a deduction of points. <b>ASSIGNMENTS</b> (70 points - 35 for each assignment). The student will complete two take home assignments throughout the semester. These assignments will help with understanding of information presented in the lectures, lab activities, and text readings.	<b>ANSC 252L</b> <b>QUIZZES</b> (70 points total-10 points for each quiz). The student will take quizzes at the beginning of each lab to demonstrate knowledge and understanding of information presented in the lectures, lab activities, and text readings. <b>CLASS PARTICIPATION &amp; CONDUCT</b> (30 points): Attendance and participation lab activities are mandatory. Each student is allowed one absence without penalty. The second unexcused absence will result in a deduction of all points from the student's attendance score. Students who come unprepared to participate or are not in proper uniform may be asked to leave class and will be considered absent. <b>RADIOGRAPHY PORTFOLIO</b> (100 Points). Students will produce a minimum of 10 radiographs of diagnostic quality. They are required to submit ALL radiographs from the semester for evaluation. These radiographs will be evaluated for correct technique, proper patient positioning, labeling, and contrast. Students must score >70% on their portfolio in order to pass the course.
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METHOD OF GRADING:			METHOD OF GRADING:		
Exams	200 points		Quizzes	70 points	
Exam Reviews	30 points		Participation	30 points	
Assignments	70 points		Portfolio	100 points	
Attendance	40 points		<b>TOTAL</b>	<b>200 points</b>	
<b>TOTAL</b>	<b>340 points</b>				
Total Points	Percentage Points	Grade	Total Points	Percentage Points	Grade
304-340	90-100	A	179-200	90-100	A
270-303	80-89	B	159-178	80-89	B
236-269	70-79	C	139-158	70-79	C
202-235	60-69	D	119-1138	60-69	D
<201	0- 59	F	<118	0- 59	F
<p>Grades may be curved at the instructor's discretion; however, the student should use the above grading scale to evaluate their performance throughout the class. If you miss an examination because of an illness or legitimate emergency, you must contact the instructor <b>within 48 hours</b> to arrange a time to take a make-up exam. 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. <b>No retests will be given for any reason.</b></p> <p><b>Students who behave in a reckless, inhumane, or unsafe manner will receive an "F" grade and be barred from attending future classes.</b></p>					
<p><b>**Please note: to continue on in VETT, you must receive a C or better in both 252 and 252L**</b></p>					

### ACADEMIC DISHONESTY

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

Academic dishonesty includes cheating on exams and plagiarism. See the course catalog for a description of the College's policies concerning academic dishonesty.

### LEARNING RESOURCES

**Textbook:** Brown, Brown 2013. Lavin's Radiography in Veterinary Technology. 5<sup>th</sup> ed. Saunders Elsevier Publishing. St. Louis, MO. 378 pp. ISBN: 1-4557-2280-4

### ADDITIONAL INFORMATION

#### STUDENT RESPONSIBILITIES

The student is expected to attend all labs and participate in all course activities. Please be considerate to other students by turning off cell phones during class. Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time on the course website. It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day for making an official withdrawal).

#### ACCOMODATION FOR STUDENTS WITH DISABILITIES

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.

**STUDENT SAFETY**

This course includes a substantial “hands-on” laboratory component in which students may be exposed to a variety of potential hazards including exposure to X-Ray radiation and caustic chemicals and risk of animal bites and scratches. Students enrolled in ANSC 252 are required to show proof of current health insurance and sign a liability waiver during the first week of class. All students are required to wear appropriate clinical attire (personal dosimeter, uniform scrubs, black scrub pants, and close-toed sneakers) *to each class*. Students who are dressed inappropriately will be barred from participating in lab activities and will receive a “zero” grade for that day’s class participation grade. **Because exposure to X-Ray radiation poses a significant risk to a developing embryo or fetus, students who are pregnant should not take this course.** Students who become pregnant during the course may request an “N” grade from their instructor.

	<b>LECTURE</b>	<b>Thur LAB</b>	<b>Fri LAB</b>	<b>READING</b>
<b>Week 1</b>	<b>Wed 5/28</b> Intro to VETT, 252/ 252L, and radiology	<b>Th 5/29</b> Machine operation, cadavers	<b>Fr 5/30</b> Machine operation, cadavers	Syllabus Ch 1-3, 17
<b>Week 2</b>	<b>Wed 6/4</b> x-ray production and the image Abdomen/Thorax	<b>Th 6/5</b> Soft tissue (abd/thx)	<b>Fr 6/6</b> Soft tissue (abd/thx)	Ch 4-6, 16 Ch 18-19
<b>Week 3</b>	<b>Wed 6/11</b> <b>King Kamehameha Day</b> ~~No Class~~	<b>Th 6/12</b> Soft tissue (abd/thx)	<b>Fr 6/13</b> Soft tissue (abd/thx)	STUDY!!
<b>Week 4</b>	<b>Wed 6/18</b> <small>Exam 1</small> Imaging, developing, extremities	<b>Th 6/19</b> Extremities	<b>Fr 6/20</b> Extremities	Ch 7-8 Ch 20-21
<b>Week 5</b>	<b>Wed 6/25</b> Digital, dental, CT, fluoroscopy Dental positioning	<b>Th 6/26</b> Soft tissue/ extremities	<b>Fr 6/27</b> Soft tissue/ extremities	Ch 9-12 Ch 24
<b>Week 6</b>	<b>Wed 7/2</b> Non x-ray imaging-U/S, MRI, nuclear Spine/skull	<b>Th 7/3</b> Spine, skull	<b>Fr 7/4</b> <b>Independence Day</b> ~~No Class~~	Ch 13-15 Ch 22-23
<b>Week 7</b>	<b>Wed 7/9</b> <small>Exam 2</small> Special procedures	<b>Th 7/10</b> Special procedures	<b>Fr 7/11</b> Special procedures	Ch 25
<b>Week 8</b>	<b>Wed 7/16</b> Large animal, avian, exotics	<b>Th 7/17</b> Skills, practice	<b>Fr 7/18</b> Skills, practice	Ch 26-27
<b>Week 9</b>	<b>Wed 7/23</b> <small>Exam 3</small>	<b>Th 7/24</b> Skills, practice <b>Portfolios due</b>	<b>Fr 7/25</b> Skills, practice <b>Portfolios due</b>	