# ANSC 252
# CRN: 60082
# Diagnostic Imaging for Veterinary Technicians

MTWR 1:00-4:10 PM
'Imiloa 133


**INSTRUCTOR:** Sam Craddock, RVT
**OFFICE:** 'Imiloa 118
**OFFICE HOURS:** M/W: 12:00-1:00
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**EFFECTIVE DATE:** Summer, 2012 (July 2-Aug 10)

**WINDWARD COMMUNITY COLLEGE MISSION STATEMENT**

*Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.*

## CATALOG DESCRIPTION

This course trains students to safely and effectively use X-Ray technology to obtain diagnostic radiographs of the skeletal and soft anatomy of companion animals. 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. This course is intended for students entering veterinary technology, veterinary assisting or other animal-related fields (4 hrs. lect/lab).

*Prerequsite:* Credit for ANSC 142/142L. Students enrolling in ANSC 252 are required to show proof of current health insurance and sign a liability waiver.

**Activities Required at Scheduled Times Other Than Class Times:** Students are required to meet individually with the instructor to produce the diagnostic radiographs necessary to complete their radiography portfolio. The schedule for these meetings will be arranged during the first week of class.

## STUDENT LEARNING OUTCOMES

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

1) Describe the uses and functioning of various types of medical imaging equipment.
2) Implement and observe recommended radiation safety measures.
3) Safely and humanely position companion animals for radiographic studies.
4) Utilize radiographic equipment to expose and develop radiographic films in order to create diagnostic radiographic images.
5) Evaluate radiographic images for proper radiographic technique and patient positioning.
6) Properly label and file radiographic films and complete radiographic logs and reports.
7) Utilize radiographic contrast agents to produce diagnostic images of urinary and GI organs.
8) Perform radiographic techniques utilized in screening for canine hip dysplasia.
9) Demonstrate proper maintenance and troubleshooting of radiographic equipment.

## COURSE CONTENT

***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:

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

## COURSE TASKS

1) Attend class at scheduled times.
2) Complete assigned readings prior to lecture.
3) Participate in class discussions
4) Complete 4 examinations.
5) Produce a portfolio of 10 radiographs of diagnostic quality

## ASSESSMENT TASKS AND GRADING

**EXAMINATIONS** (200 points total-50 points for each exam). The student will take four exams to demonstrate knowledge and understanding of information presented in the lectures, lab activities, and text readings.

**QUIZZES** (100 points total-25 points for each quiz). The student will take four quizzes to demonstrate knowledge and understanding of information presented in the lectures, lab activities, and text readings.

**CLASS PARTICIPATION & CONDUCT** (100 points): Attendance and participation in class discussions and lab activities are mandatory. Each student is allowed two absences without penalty. Each unexcused absence above two will result in a deduction of points from the student's attendance score. Students who do not participate in class discussions or come un-prepared to participate in these activities will have points deducted from their attendance and class participation points. **Students who behave in a reckless, inhumane, or unsafe manner will receive an "F" grade and be barred from attending future classes.**

**RADIOGRAPHY PORTFOLIO** (200 Points). Students enrolled in ANSC 252 will produce a minimum of 20 radiographs of diagnostic quality. They are required to submit 10 radiographs to their instructor 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.

**METHOD OF GRADING:**
The assignment of points will be according to the following:

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|---|---|
| Exams | 200 points |
| Quizzes | 100 points |
| Class Participation | 100 points |
| Portfolio | 200 points |
| **TOTAL** | **600 points** |

**GRADING SCALE:**

| Total Points | Percentage Points | Grade |
|---|---|---|
| 537-600 | 90-100 | A |
| 477-536 | 80-89 | B |
| 417-476 | 70-79 | C |
| 357-416 | 60-69 | D |
| <356 | 0- 59 | F |

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 or laboratory because of an illness or legitimate emergency, you must contact the instructor **within 48 hours** 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. **No retests will be given for any reason.**

**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 2010-2011 course catalog for a description of the College's policies concerning academic dishonesty.

## LEARNING RESOURCES

**Textbook:** Lavin, L.M. 2007. Radiography in Veterinary Technology. Saunders Elsevier Publishing. St. Louis, MO. 378 pp. ISBN: 1-4160-3189-8

**Lecture Outlines:** Chapter outlines will be given out at the beginning of each lecture.

**Laulima:** Your instructor has created a Laulima website to accompany this course. This website contains lecture outlines, copies of course forms and syllabi, and links to on-line learning resources. Students enrolled in ANSC 252 are automatically enrolled in the ANSC 252 Laulima website. To access, go to https://laulima.hawaii.edu/portal. Login using your UH username and password and click on ANSC 252**.**

## ADDITIONAL INFORMATION

### STUDENT RESPONSIBILITIES

The student is expected to attend lectures and labs, participate in all course activities, and complete all examinations and course assignments on time. Please be considerate to other students by turning off any cell phones or beepers 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).

### 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, medical scrubs, long 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, this course should not be taken by students who are pregnant.** Students who become pregnant during the course may request an "N" grade from their instructor.

### REQUIRED LAB SUPPLIES

This course requires the use of supplies (X-Ray films and developing agents) and personal monitoring equipment (dosimetry badge). Costs for these supplies are not covered by course tuition. As such, students are expected to purchase required lab supplies from the WCC bookstore and provide proof of purchase to their course instructor during the first week of class. Students who fail to purchase these supplies will be barred from participating in lab activities and will thus receive an "F" grade in the course. Please note that the cost of lab supplies is NON REFUNDABLE (*i.e.*, if a student drops the course, the supplies cannot be returned to the bookstore for a refund).

### HOW TO SUCCEED IN THIS CLASS

Although you can download all lecture outlines and course materials, you will not succeed in this class without attending lecture and taking detailed notes on the corresponding material in the textbook. Merely reading the chapter will not suffice. Science courses at WCC generally require a minimum of two to three hours of independent study time for each hour in class. It is your responsibility to allocate the appropriate amount of time needed for study and be realistic about all personal and professional commitments that may cut into your study time.

As part of your studies, you will need to understand a veritable *mountain* of medical and anatomical terms, most of which will probably be foreign to you. Most important vocabulary words appear in the beginning of each chapter in your textbook. One way to learn these vocabulary words is to make flash cards so you can quiz yourself. Answering the review questions located at the end of the chapter can also be a helpful way to learn new vocabulary and evaluate your comprehension of important concepts.

### ACCOMODATION FOR STUDENTS WITH DISABLITIES

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 ʻAkoakoa 213 for more information.

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|---|---|---|---|---|
| Week 1 | M 7/2 | T 7/3 | W 7/4 | R 7/5 |
| | Class intro, tour, safety<br>Syllabus | X-ray production<br>*Ch 1 – pg 3-7*<br>Anatomy of an x-ray machine<br>*Ch 2 – pg 9-22*<br>Set up machines (in lab) | <u>Independence Day</u><br><br><u>No Class</u> | Radiation safety<br>*Ch 3 – pg 23-34*<br>Exposure factors<br>*Ch 4 – pg 35-41*<br>PPE, collimating (in lab) |
| Week 2 | M 7/9 | T 7/10 | W 7/11 | Th 7/12 |
| | Radiographic Quality<br>*Ch5 – pg 43-57* | **EXAM #1**<br><br>Positioning<br>*Ch12-17 – pg 145-232* | Group A<br><br>Group B | Group C<br><br>Group D |
| Week 3 | M 7/16 | T 7/17 | W 7/18 | Th 7/19 |
| | Group A<br><br>Group B | Group C<br><br>Group D | Image receptors and film processing<br>*Ch 6/7 pg 59-88* | Radiographic Technique Evaluation<br>*Ch 8 – pg 89-96* |
| Week 4 | M 7/23 | T 7/24 | W 7/25 | Th 7/26 |
| | **EXAM #2**<br>Develop a technique chart<br>*Ch 9 – pg 97-104* | QA/QC<br>*Ch 10 – pg 105-124*<br>Artifacts and Errors<br>*Ch11 – pg 125-141*<br>Special procedures<br>*Ch18 – pg 233-250* | Group A | Group B |
| Week 5 | M 7/30 | T 7/31 | W 8/1 | Th 8/3 |
| | Group C | Group D | **EXAM #3**<br>LA/Av/Ex<br>*Ch 19&20 – pg 251-309*<br>Alt. imaging<br>*Ch 21 – pg 311-327* | Group A |
| Week 6 | M 8/6 | T 8/7 | W 8/8 | Th 8/9 |
| | Group B | Group C | Group D | **Exam #4** |

July 2, 2012 Summer Session II begins
July 4, 2012 Independence Day
Aug 10, 2012 Summer Session II ends