VTHT 1345  
AUSTIN COMMUNITY COLLEGE  
Semester:

PROGRAM: Veterinary Technology

COURSE NUMBER: VTHT 1345 – Veterinary Radiology
COURSE TIME/LOCATION:

FACULTY NAME:
OFFICE HOURS/LOCATION:
Phone:
Email:
Website:

Arranging conferences/appointments:

COURSE DESCRIPTION: Presentation of theory and principles and practical application of radiology within the field of veterinary medicine.

COURSE PREREQUISITES: VTHT 1301, 1191, 1413,

COURSE RATIONALE: Graduates must be able to produce diagnostic radiographs, this course provides the basics of radiography for entry level technicians. This is an intermediate level course in the ACC program.

COURSE OBJECTIVES: Upon completion of the course the student will be able to:

1. Describe the general theory of radiology.
2. Demonstrate safe radiologic technique for patient and all personnel.
3. Operate radiologic instrumentation and equipment.
4. Perform film processing, identify and mark radiographs correctly.
5. Restrain and correctly position patients for radiography, assemble materials and assist in performing radiographic techniques.
6. Interpret and develop technique charts and determine correct patient exposure settings for different views and techniques.
7. Evaluate radiographs for proper technique.
8. Maintain radiographic equipment in good condition.
9. Correctly mix radiographic development chemicals.
10. Identify other imaging modalities used in veterinary medicine.
COURSE STUDENT LEARNING OUTCOMES:
Demonstrate recommended safety procedures; prepare and use technique charts; obtain
diagnostic radiographs using stationary and portable X-ray machines; maintain radiographic
equipment; label, file, and store radiographs; and identify and/or use other diagnostic imaging
modalities.

DISCIPLINE/PROGRAM STUDENT LEARNING OUTCOMES:

Upon completion of the Associate of Applied Science Degree in Veterinary Technology, the
student will be able to:

1. Contribute to the efficient operation of the veterinary facility by:
   a. Acquiring and conveying information appropriately.
   b. Being able to carry out duties, staying within the legal boundaries and maintaining
      high ethical standards
   c. Providing quality service to clients, patients, and the facility.
2. Calculate, dispense and administer medication in the correct amount and in the
   prescribed form to maximize therapeutic benefits and minimize adverse effects. The
   student will be able to differentiate between normal and abnormal responses to
   medications and communicate necessary information to the client. The student will be
   able to perform inventory control procedures proficiently.
3. Safely obtain subjective and objective data that will allow accurate evaluation of the
   patient. The student will be able to: 1) implement techniques to promote wellness,
   achieve maximum health benefits, and reduce injury and stress to the patient; and, 2)
   recognize normal from abnormal behavior patterns.
4. Understand and explain appropriate and inappropriate dietary components for various
   life stages and therapeutic regimens (e.g., therapeutic foods) in order to promote
   optimal health, enhance recovery and manage chronic disease conditions. The student
   will also explain nutritional recommendations to clients and reinforce owner
   compliance.
5. Recognize a patient’s dental health status and perform techniques, as prescribed by a
   veterinarian, appropriate to the species and its condition in order to promote and
   maintain dental health.
6. Work with the veterinarian to: 1) Assess patient’s risk to determine appropriate
   anesthetic and pain management protocols; 2) Choose and utilize appropriate
   techniques and equipment to monitor patient’s status; 3) Recognize and respond to
   equipment malfunctions to provide maximum benefit and ensure safety of patient and
   staff; 4) use medical records to assure patient and scheduled procedures are correct;
   5) Obtain the patient’s vital signs, physical parameters to ensure pre-surgical tests and
   patient assessment are reported to the veterinarian.
7. Position patients correctly for maximum benefit for the surgeon and the patient; utilize
   appropriate aseptic techniques for patient and personnel; and, administer appropriate
   post-operative care to the patient.
8. Select, wrap and sterilize appropriate instruments and supplies and prepare and maintain the surgical environment to ensure maximum safety and benefit to the patient.

9. Prepare, handle and submit appropriate samples for diagnostic analysis; and be able to:
   1) recognize accurate vs. erroneous results; 2) determine appropriate methods and carry out analytical procedures to provide accurate diagnostic information; and, 3) work with the veterinarian to determine if laboratory tests will be needed.

10. Accurately 1) prepare the imaging site and equipment; 2) position patients for the appropriate study; 3) properly use radiographic and darkroom equipment positioning, measuring, and using appropriate radiographic technique to produce a diagnostic image; 4) determine if image is diagnostic, and if not, be able to offer options to correct image to create a diagnostic radiograph to minimize repeat exposures; and, 5) exercise professional judgment to minimize risks to patient and personnel.

11. Describe the basic principles of animal research and understand the utilization of laboratory animals in animal research. The student will also have a working knowledge of federal, state, and local animal welfare regulations.

**SCANS Competencies**

In 1990, the U.S. Department of Labor established the Secretary’s Commission on Achieving Necessary Skills (SCANS) to examine the demands of the workplace and whether our nation’s students are capable of meeting those demands. The Commission determined that today’s jobs generally require competencies in the following areas:

- Resources: Identifies, organizes, plans and allocates resources
- Interpersonal: Works with others
- Information: Acquires and uses information
- Systems: Understands complex interrelationships
- Technology: Works with a variety of technologies

The Texas Higher Education Coordinating Board requires that all degree plans in institutions of higher education incorporate these competencies and identify to the student how these competencies are achieved in course objectives.
<table>
<thead>
<tr>
<th>VTHT 1345</th>
<th>EXAMPLE OF LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>Identifies resources used in course and allocates time for studying.</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Shares experiences and knowledge with classmates, works as a member of a team for any assigned activities.</td>
</tr>
<tr>
<td>Information</td>
<td>Identifies imaging modalities used in veterinary medicine.</td>
</tr>
<tr>
<td>Systems</td>
<td>Identifies appropriate imaging technique for the different body systems.</td>
</tr>
<tr>
<td>Technology</td>
<td>Uses electronic recording devices for digital images and uses current technologies for imaging techniques.</td>
</tr>
<tr>
<td>Basic Skills</td>
<td>Reads assigned pages.</td>
</tr>
<tr>
<td>Thinking Skills</td>
<td>Identifies and prepares for tests, quizzes and research activities.</td>
</tr>
<tr>
<td>Personal Qualities</td>
<td>Works as a team member for any assigned activities. Asserts self and networks with classmates and virtual lab to obtain information on current topics.</td>
</tr>
</tbody>
</table>

**TEXTBOOK:**
Practical Diagnostic Imaging for the Veterinary Technician, 3rd ed., Connie Han, Cheryl Hurd

**INSTRUCTIONAL METHODOLOGY:** Classroom and Laboratory work

**GRADING SYSTEM:** The Veterinary Technology courses use the following scale for determination of final grades:

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69
- F = below 60

A grade of 70% or above is required for passing any subject area.

**METHOD OF EVALUATION:** (Approximates)

- 21% of your grade will be based on assignments, quizzes and presentations
- 25% on exams (midterm exams)
- 40% on Laboratory
- 12% on Final
***NOTE: You must pass both the lab and lecture portion with a 70% or above to pass the class. If you have above a 70% in both, the grades will be combined for your final grade.

Quizzes: No make-up quizzes. No exception. If students are late or absent from the class when quiz is begins, they miss the quiz. Grades will be based on points earned.

Late Assignment Policy: Assignments are expected to be turned in on time. If for some reason you are not able to get it turned in on time you can submit the next business day for a 50% deduction, an additional 10% deduction for each day thereafter. The assignment can be submitted in person, faxed, or scanned and e-mailed to the instructor. If a student knows they will miss a class they can submit their assignment electronically for full credit the day it is due. For any other circumstances the student needs to contact the instructor.

Exam Policy: You are expected to be present for all exams. If you miss an exam, arrangements must be made up within a week of when it was given. Make up exams are usually an essay type of exam. If it is not taken by that time, you will receive a “0” for that exam. To take an exam at a time other than the class time in which it is given, the absence must be “excused” by the instructor. “Excused” absences include illness, death, and other unavoidable circumstances. Written evidence must be presented. ONLY ONE EXAM MAY BE MADE UP. If more than one exam is missed, you will receive a “0” on all other missed exams.

COURSE POLICIES:

Attendance/Class Participation
Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class.

Withdrawal Policy
It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decides to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.
Incompletes
An instructor may award a grade of “I” (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. You will not be able to carry an incomplete beyond the final deadline for withdrawal in the next semester of the program.

Statement on Scholastic Dishonesty
A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an “F” in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at http://www.austincc.edu/handbook

The complaints and grades dispute process can also be found at the above site and is located in your Veterinary Technology Program handbook at http://www.austincc.edu/health/vtht/handbook.php

Student Rights and Responsibilities
Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Statement on Students with Disabilities
Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Student Accessibility Services and Assistive Technology. Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from SAS for this course must provide the instructor with the ‘Notice of Approved Accommodations’ from SAS before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the ‘Notice of Approved Accommodations’ from the student.
Students with approved accommodations are encouraged to submit the ‘Notice of Approved Accommodations’ to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations. Additional information about the Student Accessibility Services and Assistive Technology is available at http://www.austincc.edu/support-and-services/services-for-students/student-accessibility-services-and-assistive-technology

Safety Statement
Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at http://www.austincc.edu/ehs.

Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at http://www.austincc.edu/emergency/.

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.

Use of ACC email
All College e-mail communication to students will be sent solely to the student’s ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at http://www.austincc.edu/accmail/activation-and-login-assistance

For help setting up your ACCellD, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab.

Testing Center Policy
Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:
- ACC Photo ID
- Course Abbreviation (e.g., ENGL)
- Course Number (e.g., 1301)
- Course Synonym (e.g., 10123)
Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, regardless of whether it is on or off, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at http://www.austincc.edu/testctr/

**Student and Instructional Services**
ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: http://www.austincc.edu/s4/

Links to many student services and other information can be found at: http://www.austincc.edu/current-students

ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: http://www.austincc.edu/support-and-services/tutoring-and-academic-help/tutoring-services-and-schedules
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic Area/Objective</th>
<th>Reading/Other Assignments</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Basic Concepts – Atomic Theory</td>
<td>Chp. 1- 2</td>
<td>Lab – practice imaging inanimate objects</td>
</tr>
<tr>
<td>Week 2</td>
<td>Electrostatics, Magnetism, Electricity</td>
<td>Chp. 3</td>
<td>SA – Abdomen Positioning Chp. 18</td>
</tr>
<tr>
<td>Week 3</td>
<td>X-ray production – Radiology machine</td>
<td>Chp. 4</td>
<td>SA – Thorax Positioning Chp. 19</td>
</tr>
<tr>
<td>Week 4</td>
<td>Radiation safety Overview of Positioning</td>
<td>Chp. 16 Chp. 17</td>
<td>SA – Vertebral Column positioning Chp. 22</td>
</tr>
<tr>
<td>Week 5</td>
<td><strong>Exam #1</strong> Imaging on Film</td>
<td>Chp. 5</td>
<td>SA – Skull positioning Chp. 23</td>
</tr>
<tr>
<td>Week 6</td>
<td>Imaging in Film Producing the Image</td>
<td>Chp. 5 Chp. 6</td>
<td>Chp. 6 Technique Chart development Lab</td>
</tr>
<tr>
<td>Week 7</td>
<td>Technique Chart Optimizing the Image</td>
<td>Chp. 6 Chp. 7</td>
<td>SA – Forelimb positioning Chp. 20</td>
</tr>
<tr>
<td>Week 8</td>
<td>Processing the Image</td>
<td>Chp. 8</td>
<td>SA – Forelimb positioning Chp. 20</td>
</tr>
<tr>
<td>Week 9</td>
<td>Digital Imaging</td>
<td>Chp. 9</td>
<td>SA – Pelvic Limb positioning Chp 21</td>
</tr>
<tr>
<td>Week 10</td>
<td>Exam #2 Dental Radiography</td>
<td>Chp. 10</td>
<td>SA – Pelvic Limb positioning Chp 21 OFA lab</td>
</tr>
<tr>
<td>Week 11</td>
<td>Special Procedures</td>
<td>Chp. 25</td>
<td>Dental Radiography Chp. 24</td>
</tr>
<tr>
<td>Week 12</td>
<td>Ultra sound</td>
<td>Chp. 13</td>
<td>Special Procedure Lab Barium – Chp. 25</td>
</tr>
<tr>
<td>Week 13</td>
<td>Magnetic Resonance Imaging &amp; Nuclear Medicine</td>
<td>Chp. 14 &amp; 15</td>
<td>Animal Radiographs</td>
</tr>
<tr>
<td>Week 14</td>
<td>Computerized Tomography Fluroscopy</td>
<td>Chp. 11 Chp. 12</td>
<td>Animal Radiographs</td>
</tr>
<tr>
<td>Week 15</td>
<td>Large Animal Radiology</td>
<td>Chp. 26</td>
<td>Lab Final</td>
</tr>
<tr>
<td><strong>Week 16</strong></td>
<td><strong>Review for Final</strong></td>
<td>Final Exam!</td>
<td></td>
</tr>
</tbody>
</table>
VTHT 1345 – Veterinary Radiology

By signing below I declare that I have received a copy of the course syllabus for VTHT 1345 – Veterinary Radiology and have had a chance to review it and understand the contents of the syllabus. This is for the semester inclusive of the date below.

_________________________________________________  __________________
Student Signature        Date