CONTACT INFORMATION:

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Due to clinic service of faculty, consistent office hours are not available. It is recommended that meeting time and location be agreed upon via email.

COURSE MATERIALS:

Recommended Text(s):
Pennick, D., D’Anjou, M-A. Atlas of Small Animal Ultrasoundography, Blackwell Publishing

COURSE DESCRIPTION:

Goal/Rationale of the Course
This 2-week ultrasound elective course is designed to improve skills and interpretation of ultrasound in veterinary medicine while being part of an active hospital setting. The students are integral part of the rotation and will be practicing ultrasound on clinical patients to increase knowledge of the systematic approach. Ultrasound is a skill technique that requires hand-eye coordination and an understanding of the modality, indications, anatomy, image recognition and pathophysiology. This rotation will give ample time for self-study and practice and in depth discussions with your mentor.

COURSE OBJECTIVES:

<table>
<thead>
<tr>
<th>After this rotation, you should be able to</th>
<th>List keywords for each objective</th>
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</thead>
<tbody>
<tr>
<td>1. Use the ultrasound equipment.</td>
<td>Ultrasound equipment</td>
</tr>
<tr>
<td>2. List indications for abdominal ultrasound studies.</td>
<td>Indications; Ultrasound</td>
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<tr>
<td>3. Use the systematic approach to scan an abdomen in a small animal.</td>
<td>Systematic approach; Small animal;</td>
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<tr>
<td>4</td>
<td>Identify normal anatomical structures.</td>
</tr>
<tr>
<td>5</td>
<td>Recognize abnormal findings on ultrasound images.</td>
</tr>
<tr>
<td>6</td>
<td>List pathological conditions that can produce given abnormal image findings.</td>
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<tr>
<td>7</td>
<td>Formulate differential diagnoses based on the pattern of observed abnormal image finding.</td>
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<tr>
<td>8</td>
<td>Propose a final diagnosis based on the image findings and clinical presentation.</td>
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</table>

**Ultrasound**

**TEACHING PHILOSOPHY:**

Ultrasound plays a vital role for the practicing veterinarian as it has impact on therapeutic and prognostic decisions in the care of an animal. The intent of the rotation is to familiarize the veterinary student with the basic principles of a systematic ultrasound examination of the abdomen, practicing image interpretation with anatomy and disease recognition. Hand-eye coordination is the basis for ultrasound skills as well as image recognition. While observing an ultrasound examination, the student will be able to improve image and disease recognition while discussing image findings, physical principles and pathophysiology with the radiologist or resident on duty. Expand your ultrasound knowledge through independent study, direct conversations with mentors, using the teaching file and books provided for you in radiology.

**COURSE POLICIES:**

**Dress code**

Practical and professional attire is required: sturdy shoes, long pants (jeans or slacks) or scrubs are acceptable. Unacceptable are open toed shoes (that includes Flip flops), dresses or sport clothing.

**Equipment**

The resident or radiologist in charge supervises the use of the ultrasound equipment and will orient the student on the correct handling and care of the ultrasound equipment to ensure longevity of the machine and its transducers.

**Orientation**

All students must attend the ultrasound orientation meeting on the first day of the block at 8 AM.

**Attendance/Lateness Policy**

Absences must be pre-approved by the radiology faculty on clinic duty. One day is allowed per 2-week rotation. Unexcused absences and tardiness will result in an incomplete grade and students will be required to repeat the rotation. Missed days that are made up will not count towards the total allowable excused absences. Please see Phase II attendance requirements below.

**Natural Disasters (Hurricanes, etc)**

Hurricane Season officially runs from June 1st - Nov. 30th. The projected path of tropical storms/hurricanes are mapped by the National Hurricane Center: [http://www.nhc.noaa.gov/?atlc](http://www.nhc.noaa.gov/?atlc). Please stay aware of impending storm systems. Staff and students of the VTHC are "essential personnel" during disasters affecting our community. The clinic schedule and student responsibilities may change during such events. Students may be required to participate in VTH emergency response efforts depending upon need and safety. **Please check in with the radiology faculty on clinics daily beginning 72 hours prior to any storm landfall projected for Louisiana.** If you are asked to report for duty during an emergency, your personal safety is the number one priority. Use common sense in your commute and alert the radiology faculty on clinics (225-578-9506) if you are unable to arrive safely.

Preparedness begins at home. Please view the section on hurricane preparedness on moodle and make sure you and your household is prepared (also visit: [http://www.getagameplan.org/](http://www.getagameplan.org/)).

**Home Football Games**

Travel to the VTH during football season can be an adventure. Here is some general advice for negotiating the obstacles.

1. Be sure to have your SVM identification badge with you.
2. Approach the SVM via River Road along the levee (rather than Highland Rd).
3. There should be staff, student, and client parking reserved in front of the building for those needing access to the hospital.
4. If there is no parking, contact the campus police officer on duty (225-578-9811) to permit access to the equine clinic parking and parking behind the Dean's office (behind the gate).

GRADING/EVALUATION:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Ultrasound Interpretation</td>
<td>60%</td>
</tr>
<tr>
<td>Ultrasound skills</td>
<td>30%</td>
</tr>
<tr>
<td>Attitude and Responsibility</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Ultrasound Interpretation (60% of final grade):
Images will be discussed on a case-to-case basis and during the examination of the patient and will include all aspects of ultrasound such as artifacts, basic physics and interpretation principles, anatomy and pathophysiology. In addition, participation, observation and description of image findings will be discussed and can be observed by the student while part of this rotation.

Ultrasound skills (30% of final grade):
Ultrasound skills will be practiced by scanning clinical patients (usually limited time is given to the student for practice and depending on clinical presentation of the animal) or student owned animals to improve hand-eye coordination and connecting movements of the transducer with image recognition on the screen.

Attitude and Responsibility (10% of final grade):
Courtesy, honesty, timeliness and teamwork are expected from each student beginning with your first contact with faculty and staff in radiology extending to the hospital throughout your entire block.

E*Value:
Competencies will be completed online using E*Value, to provide feedback and recommendations for improvement by the faculty in charge of topic morning rounds. Evaluation will be completed weekly and send out to students with a summary at the end of the block.

ASSIGNMENTS/RESPONSIBILITIES:

**Daily duties**
- Switching on ultrasound machine
- Student MUST consult with the radiologist prior to calling a case
  - Radiologist or resident on duty will determine which cases and in which order
  - Do not start scanning a case if the radiologist or resident in charge is not informed
- Clip the animal according to the instructions of the radiologist or resident in charge
- Student can scan cases according to the on-duty radiologist's assignment
  - The student can usually scan for 10 minutes on most cases
  - Fractious or sedated animals may require that only the radiologist or the resident scans them due to time constraints and necessity to expedite the examination
- Clean US machine with air-can sprayer and vacuum up the hair in the room at end of day.
- Shut off lights and US machine at end of day

**Reading assignments**
The ultrasound elective rotation creates ample opportunity for self-study and practical training. Ultrasound books are provided in the ultrasound room for reading as well as a teaching file with cases organized by anatomic location.

**Topic Morning Rounds**
Topic rounds take place in the radiology reading room or in Classroom 2102 (from February through May). Students in this elective block will participate in the topic morning rounds together with the students on the clinical radiology rotation. Topics will vary pending which half block the students attend and are outlined below.

**Thursday Diagnostic Imaging journal club 12-1pm**
Weekly journal club discussions take place in the radiology conference room. Residents will discuss pertinent imaging literature that is send out prior to all the participants by the resident in charge. It is expected that these articles be read in advance.
Feedback
Please provide feedback by the end of the rotation on Moodle by login to your myLSU account: http://itsweb.lsu.edu/Moodle/

COURSE CONTENT AND OUTLINE:
Topic rounds take place Monday through Thursday in the radiology reading room or classroom 2102 from March through May. Topic is depending on what half block (a or c) the student is attending this half block rotation.

<table>
<thead>
<tr>
<th>Block</th>
<th>Week</th>
<th>Topics</th>
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<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>Thorax – small and large animal</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>Cardio – Skull/spine</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>Extremities – small and large animal</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>Abdomen</td>
</tr>
</tbody>
</table>

Thursday Diagnostic Imaging Journal club 12-1 pm
Weekly journal club discussions take place in the radiology conference room. Residents will discuss pertinent imaging literature that is send out prior to all the participants by the resident in charge. It is expected that these articles be read in advance.

Friday house officer seminar 8-9 am
Students on this rotation will attend the Friday morning house officer seminar, usually in 3rd year classroom (location might vary during the year, ask your clinician on duty).

OTHER RESOURCES:
- Moodle
- Lecture notes
- Ultrasound books in ultrasound room
- Teaching file

PHOTOGRAPHS AND VIDEO OF PATIENTS:
Photographs and video may be taken of patients for educational purposes (e.g., for use in abstracts, articles, and presentations). Any photographs and video for use by the media may not be taken without the express consent of the patient’s owner. Verbal consent by the animal’s owner is an acceptable means of gaining permission to photograph/video the patient. If a member of the media is present in the hospital and wishes to take background footage of clinicians and students working with animal, no close-up shots are permitted such that the animal would be identified by its owner. All media requests must be directed to the LSU – School of Veterinary Medicine Public Relations Director, Mrs. Ginger Guttner.

POSTINGS ON INTERNET/ SOCIAL NETWORKING SITES:
Posting, releasing, or otherwise disclosing photos, identifiable case descriptions, images, or records related to the educational, clinical, or research activities of the LSU - School of Veterinary Medicine, outside of the LSU - School of Veterinary Medicine via social networking sites (e.g. MySpace, Facebook, Twitter, etc.) or via other than standard professional means of query and/or dissemination of educational, clinical, or research information is prohibited. This policy applies to all students, faculty, staff, clients, and visitors of the LSU - School of Veterinary Medicine and to all activities of the LSU - School of Veterinary Medicine, on or off campus, related to veterinary clinical services and teaching and research labs. Pictures of animals (whether owned by University or client), and client information are strictly forbidden from being published or posted on social networking sites such as “Facebook”, “Twitter”, and “Myspace”; and non-educational blogs, message boards, or internet websites; without the prior approval from an appropriate Supervisor, Department Head, Director of the LSU – School of Veterinary Medicine Veterinary Teaching Hospital, or the Director of the Louisiana Animal Disease Diagnostic Laboratory. This policy is to promote the safety and privacy of students, faculty, staff, clients, and visitors. Failure to comply with this policy could result in damage to persons or property, may be a violation of legal, professional, and/or ethical obligations, and may result in disciplinary action by the LSU – School of Veterinary Medicine, up to and including dismissal.

ATTENDANCE REQUIREMENT:
All students in the Phase II curriculum may be allowed a maximum of six (6) excused absences (this may be days or portions thereof, depending on the desires of the block mentor and course coordinator) which require no form of remediation. Additional days, for the days of the examination only, will be allowed to take the North American Licensing Examination. Examples of excused absences that may be allowed are: job interviews, state board examinations, family emergencies, illness, and attendance of professional meetings.

The block mentor shall have the final authority on granting an excused absence. Resolution of a dispute over excused absences shall be the duty of the Associate Dean for Student Affairs. Block mentors will be encouraged to allow any necessary excused absence, however insufficient student numbers on a block may preclude the approval of an excused absence. A maximum of two excused absences will be allowed per four week block and one excused absence per two week block. If a student exceeds the number of excused absences allowed per block then remediation may be required to pass the block (such as additional assignments or making up time lost).

If a student misses more than 2 days in any block’s grading period, then remediation may be required. These missed days include boards and excused absences (i.e. travel to and from boards and the boards). All excused absences greater than the six days allowed may require remediation. A written notification to the Associate Dean for Student Affairs for approval will be required at least four weeks in advance in anticipation of any anticipated excused absence over 6, or as soon as possible after an unanticipated excused absence. The Course Coordinators will forward a copy of any excused absence to the VCS office for tabulation. A written confirmation of the absence may be required. A written excuse may be required. If a written excuse cannot be obtained, then the absence will be considered unexcused. Any unexcused absence will require remediation and/or possible failure of the block.

**LSU SCHOOL OF VETERINARY MEDICINE ACADEMIC MISCONDUCT POLICY:**

The LSU Code of Student Conduct applies to the School of Veterinary Medicine within the Code is the Academic Misconduct Policy, which outlines the School of Veterinary Medicine expectations for the integrity of students’ academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the LSU Code of Student Conduct Policy and for living up to their pledge not to violate the Code.

I. It shall be a violation of this Code for a student to cheat.

II. It shall be a violation of this Code for a student to knowingly circumvent any course requirement.

III. It shall be a violation of this Code for a student to steal.

IV. It shall be a violation of this Code for a student to purposely impair another student’s educational opportunity.

V. It shall be a violation to act in a manner which is detrimental to the moral and ethical standards of the veterinary medical profession.

VI. It shall be a violation for a student to knowingly deceive another student, faculty member, or professional associate with the intent to gain advantage, academic or otherwise, for said student or for any other student.

VII. It shall be a violation for any student to fail to report any infraction of the LSU Code of Student Conduct Policy to an appropriate representative.

LSU Code of Student Conduct can be found at: [http://saa.lsu.edu/code-student-conduct](http://saa.lsu.edu/code-student-conduct)

**SEXUAL HARASSMENT POLICY:**

The University reaffirms and emphasizes its commitment to provide an educational and work environment free from sexual harassment and to provide a means to remedy sexual harassment that employees may have experienced. (PS-73 Sexual Harassment and PS-95 Sexual Harassment of Students)

The intent of this policy is to express the University’s commitment and responsibility to protect its students from sexual harassment and from retaliation for participating in a sexual harassment complaint. It is not intended to infringe upon constitutionally guaranteed rights nor upon academic freedom. In considering allegations of sexual harassment, the University must be concerned with the rights of both the complainant and the accused.

All proven cases of sexual harassment shall result in appropriate disciplinary action. The severity of the disciplinary action shall be consistent with the seriousness of the act of sexual harassment. Additionally, under appropriate
circumstances, the University may take action to protect its students from sexual harassment by individuals who are not students of the University. If the alleged harasser is a student, the Dean of Students Office must be notified of the complaint.

Student Advocacy & Accountability, Office of the Dean of Students, LSU Student Life & Enrollment, 340 LSU Student Union, Baton Rouge, LA 70803, Phone: (225) 578-4307 Fax: (225) 578-5637 dossaa@lsu.edu

GENERAL STATEMENT ON ACADEMIC INTEGRITY:
Louisiana State University adopted the Commitment to Community in 1995 to set forth guidelines for student behavior both inside and outside of the classroom. The Commitment to Community charges students to maintain high standards of academic and personal integrity. All students are expected to read and be familiar with the LSU Code of Student Conduct and Commitment to Community, found online at www.lsu.edu/saa. It is your responsibility as a student at LSU to know and understand the academic standards for our community. Students who are suspected of violating the Code of Conduct will be referred to the office of Student Advocacy & Accountability. For undergraduate students, a first academic violation could result in a zero grade on the assignment or failing the class and disciplinary probation until graduation. For a second academic violation, the result could be suspension from LSU. For graduate students, suspension is the appropriate outcome for the first offense.

AMERICANS WITH DISABILITIES ACT:
Louisiana State University is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request.

Students with disabilities: If you are seeking classroom accommodations under the Americans with Disabilities Act, you are required to register with Disability Services (DS). DS is located in 115 Johnston Hall. Phone is 225-578-5919. To receive academic accommodations for this class, please obtain the proper DS forms and meet with me at the beginning of the class. The Office of Student and Academic Affairs can help you if you have questions as well. http://disability.lsu.edu/students

SYLLABUS CHANGE POLICY:
Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advanced notice.

COPY STATEMENT:
Some of the materials in this course are possibly copyrighted. They are intended for use only by students registered and enrolled in this course and only for instructional activities associated with and for the duration of the course. They may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act (Section 110(1) of the Copyright Act) http://www.copyright.gov/docs/regstat031301.html.

SVM INSTITUTIONAL LEARNING GOALS/OBJECTIVES Aligned WITH COMPETENCIES:

<table>
<thead>
<tr>
<th>Competency One: Comprehensive patient diagnosis (problem solving skills), appropriate use of clinical laboratory testing, and record management</th>
<th>Aligned with VMED 5463 Learning Objective</th>
<th>Assessment Method</th>
<th>Teaching Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Patient Assessment/Clinical Thinking Skills</td>
<td>2, 3, 4, 5</td>
<td>Clinical performance rating/checklist</td>
<td>Case based instruction; Discussion, Small group</td>
</tr>
<tr>
<td>1.3 Knowledge Base/Basic Pathophysiology</td>
<td>2, 5, 6, 7, 8</td>
<td>Clinical performance rating/checklist</td>
<td>Case based instruction; Discussion, Small group</td>
</tr>
<tr>
<td>1.4 Diagnostic Skills/Clinical Laboratory Assessment</td>
<td>1, 2, 3, 4, 5</td>
<td>Clinical</td>
<td>Case based</td>
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<tr>
<td>Competency Two: Comprehensive treatment planning including patient referral when indicated</td>
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<tr>
<td>2.2 Understanding Therapeutic Modalities and Availability (would include knowledge of referral services available)</td>
<td>1, 2</td>
<td>Clinical performance rating/checklist</td>
<td>Case based instruction; Discussion, Small group</td>
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<tr>
<th>Competency Eight: Client communications and ethical conduct</th>
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<tr>
<td>8.2 Working with Health Care Team</td>
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<tr>
<th>Competency Nine: Critical analysis of new information and research findings relevant to veterinary medicine</th>
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<tbody>
<tr>
<td>9.1 Critical Analysis of New Information and Research Findings Relevant to Veterinary Medicine</td>
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<tr>
<th>Competency Ten: Comparative Pathobiology: In the clinical setting discuss and apply basic science (physiology, immunology, histology, neuroscience, anatomy, etc.) to clinical cases within and across common species and between animal classes (mammals, birds, fish, reptiles, amphibians, etc.).</th>
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<tbody>
<tr>
<td>10.1 Comparative and developmental physiology &amp; anatomy</td>
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