

VEM5851 Applied Pathology Elective Clerkship

BLOCKS A-Z

CREDIT HOURS: 2 CREDIT HOURS

GRADING SYSTEM: A-E GRADING

PHASE: 3

Course Coordinator

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Office Hours: By appointment only.

Course Description

Goals and objectives for the rotation:

1. Competency in necropsy techniques

You should be absolutely comfortable with a standard necropsy procedure including dissecting hearts and removing brains from carcasses. We realize that you will not always have the time in private practice to do this kind of necropsy. But if you can do a standardized “academic type” necropsy, you can easily modify the procedure to meet your needs. Likewise, there will definitely be times when you will need to be able to competently perform a complete necropsy. These times will include dealing with insurance companies, the threat of litigation, and opportunities to learn from a particularly difficult or interesting case. Veterinarians in teaching hospitals have a tremendous learning advantage because many of their cases eventually end up as necropsies. They get answers to many of their clinical questions and are wiser when a similar case comes along in the future. Our goal is to help you become a better veterinarian by making you so comfortable with a necropsy technique that you will never hesitate to pursue those same clinical answers. We will expect you to demonstrate this technical competence before you pass this rotation.

2. Accurate and objective description of gross lesions

You should learn how to clearly describe a gross change in tissue so that a colleague (e.g., a pathologist at a diagnostic service) can understand exactly what it was you saw and perhaps

help you interpret that finding. The goal is to create a “word picture” which is theoretically not interpretive. Careful attention to normal tissue including taking the time to describe “normal “ will help you to recognize abnormal, incidental findings, and background pathology. Accurate, documentable record keeping is a logical and important part of this objective. It is also one of the main areas where veterinarians have failed when they are involved in a legal dispute. In this rotation you will be expected to generate good records of your findings.

3. Interpretation of gross lesions

Interpretation is the next step and is based upon gross appearance in conjunction with species, signalment, clinical history etc. Our interpretations are formulated into morphologic diagnoses that convey in a concise format all pertinent information about the disease process in that organ. The skill of formulating morphologic diagnoses takes time to master, and requires you to have an understanding of diseases processes, pathogenesis and to be able to recognize the gross appearance of various classical tissue pathologic changes. Each morphologic diagnosis follows a similar pattern: Process, qualifier, duration, distribution, severity, site. E.g. – Dermatitis, ulcerative, acute, locally extensive, severe, haired skin of footpad.

4. Histologic lesion recognition and analysis

The main objectives are to learn how to recognize, describe and diagnose microscopic lesions and to correlate those findings with gross lesions and clinical/clinicopathologic data.

Specific instructions for microscopic evaluation of tissues:

Microscopic description: Look at the slides from each case, count the pieces of tissue, and identify each specimen, if possible, to be sure each piece is examined. List the slide number(s), name the tissue or otherwise identify the specimen, and describe each tissue or specimen separately. State how many representative sections are examined. Compose a first sentence for each tissue or specimen that conveys the essence of the pathologic changes. Then write a concise, systematic description. Begin with the most significant lesions and progress to the least significant. Examine all anatomic subunits within the tissue (e.g., kidney- glomeruli, tubules, vessels, interstitium, renal pelvis, capsule) and describe any abnormalities. Describe normal structures only if you are unsure of the significance or if this will help to rule out some disease processes on the clinician's differential list. Write complete sentences in the present tense. Include details revealed by special stains. Write one or more morphologic diagnoses, indicating to which tissue you refer.

Comment: In many regards, this can be the most important part of the report to the clinician who submitted the specimen. Answer any questions asked in the request, and explain, when possible, any discrepancies between clinical findings and your diagnosis. Try to anticipate what the clinician is seeking and provide that information, if possible. For surgical pathology specimens, comments regarding probability of recurrence, metastasis, and prognosis are especially pertinent.

General guidance for writing morphologic diagnoses:

They should generally include: Process, qualifier, duration, distribution, severity, organ.

Process	Qualifier	Duration	Distribution	Severity	organ
-itis/-opathy	Purulent	Peracute	Focal	Minimal	
Infarct	Hemorrhagic	Acute	Locally extensive	Mild	
Hemorrhage	Necrotizing	Subacute	Diffuse	Moderate	
Necrosis	Fibrinous	Chronic	Multifocal	Severe	
Edema	Serosanguinous				
Effusion	Proliferative				

Neoplasia is a bit different, just typically written as: Neoplasm, location, with metastases to _____. (e.g., Hemangiosarcoma, right atrium, with metastases to lung.)

Student assignments:

The student will be responsible for completing at least one full necropsy case during their two-week rotation under resident and faculty guidance. Ideally, this case will be obtained in the first day or two of the rotation. The student will be responsible for the gross necropsy and collection of tissues as well as for trimming tissues that will be processed into slides. The student will generate a gross report (with descriptions and diagnoses), a preliminary report (with gross diagnoses and a comment), and a final report (gross report plus microscopic descriptions, final anatomic diagnosis, and comment). Additionally, the student will be responsible for multiple surgical pathology reports (typically no more than 1-2 per day).

Student Learning Outcomes

After successful completion of this course, students will be able to:

1. Demonstrate proficiency in necropsy technique
2. Collect appropriate samples for fixation
3. Demonstrate proficiency in lesion description
4. Formulate appropriate morphologic diagnoses
5. Demonstrate ability to present case findings and summarize conclusions verbally
6. Demonstrate ability to present case findings and summarize conclusions in writing

Course Schedule

The course lasts for the duration of the two-week clerkship rotation cycle which may include additional days or be truncated according to the presence of holidays or graduation. Students should consult the schedule provided by the Office for Academic and Student Affairs for the updated schedule for clerkship rotation blocks.

Daily schedule:

Generally, most students doing this rotation will spend their mornings in surgical pathology and their afternoons on necropsy. Depending on the interests of the student and availability of faculty, they may be able to be scheduled to do some dermatopathology or aquatic animal pathology. A typical daily schedule for the rotation follows.

Weekdays, approximately 8:00-9:00 AM: Meet with pathologist on surgical pathology to review slides and reports. The student should confirm the prior day where and when to meet the on-duty pathologist.

Weekdays, 1:00 PM: Report for necropsy duty on the necropsy floor.

Daily on weekdays at ~4:30pm: Show and Tell for clinicians and students (dependent on cases)

Saturdays: The student will be on call for one of the two weekends of the rotation. The assigned group is responsible for any cases that are ready for necropsy by noon on Saturday. A case is ready for necropsy if two criteria are met: 1. the body has been brought to necropsy, and 2. there is a signed necropsy form which must include designation as a disposal or cremation (private or otherwise). Students should be present and ready for necropsy by 9 AM; some clinicians may prefer to have the resident call those on duty that weekend about 8:30 AM to let them know whether to come in. This group is expected to be easily available by phone for additional emergencies until Monday at 8:00 AM. If you trade emergency days, it is the **absolute** responsibility of the student who was originally scheduled to **ensure** the pathologist and resident on duty know whom to contact.

In addition to teaching rounds during the afternoon with the students on the core pathology rotation (Thursday Show and Tell rounds, review of histopathology of necropsy cases from that rotation, review of histopathology of specimens received on the surgical biopsy service and review of gross lesions using PowerPoint presentations), students will also attend and participate in rounds with the Anatomic Pathology residents, including gross pathology rounds, mystery slide seminar, and Joint Pathology Center seminar. Mystery slide seminar requires preparation, as the student will present a description of

the slide, diagnoses and differentials to the group; the other rounds do not require any preparation beforehand.

Required Textbooks and/or Course Materials

None

Recommended Textbooks and/or Course Materials

Pathology textbooks, current journal articles, and electronic resources as needed for the unique set of cases examined in any given clerkship rotation block. Some useful reference handouts and papers will be provided on the first day of the rotation.

Methods of Evaluation

Grading of your performance during this rotation will be performed by both residents and faculty, and will be based on the following criteria:

- Problem prioritization and differential diagnoses
- Diagnostic plan
- Diagnostic test interpretation (includes recognition and interpretation of pathologic lesions—formulating morphologic diagnoses)
- Knowledge base
- Critical thinking skills
- Necropsy skills
- Records (includes description of pathologic lesions)
- Communication
- Professionalism/professional maturity/ethical behavior

For each of the criteria, you will be assessed a score from the following categories, with grades assigned in each category in parenthesis: Exceeds Expectations (A+, A, A-), Meets Expectations (B+, B, B-), Competent (C+, C, C-) and Below Expectations (E). Your final letter grade will reflect these scores, although the average may be overridden if the faculty deem it necessary. Faculty and residents are requested to provide specific constructive feedback which will also be provided in the electronic score and grade report provided to the Office of Students and Instruction. The grade in each category will be reported by the course coordinator, as well as the final grade and comments.

Course Policies

Reports may be run through software to detect plagiarism. If you have copied portions of your reports out of journals, textbooks or other sources, this is considered plagiarism. Plagiarism on reports will result in failing the rotation.

Curriculum Policies

DVM curriculum policies are consistently held and reinforced across all DVM courses. Please visit the DVM webpage and review the curriculum policies listed within the student handbook (<https://education.vetmed.ufl.edu/dvm-curriculum/student-handbook/>).

Students with Accommodations

Students who are seeking classroom or testing accommodations must contact the UF Disability Resource Center (<http://www.dso.ufl.edu/drc/> 352-392-8565) for an assessment and to obtain a letter of accommodation. The DRC is located on the main UF campus. ASA (Office for Academic and Student Affairs) works closely with the DRC to ensure student accommodations are met in the classroom and during exams. Melissa Cox in ASA assists in coordinating exams and meeting recommended disability-related requirements for students with accommodations (melissacox@ufl.edu). This process can also be found on the DVM webpage within the student handbook (<https://education.vetmed.ufl.edu/dvm-curriculum/student-handbook/>).

Course and Instructor Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations. A new evaluation system has been developed to be more informative to instructors to enhance teaching effectiveness and to be more seamless through integration with Canvas. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Evaluations are typically open during the last two or three weeks of the course, but students will be given specific times when they are open. Summary results of these assessments will be available to students at the end of the semester.

Appendix A: Faculty and Resident Instructors

Course Faculty varies by block, but includes a faculty pathologist and a resident from the following list:

Faculty Name: Dr. Jeffrey Abbott
Email: abbottj@ufl.edu

Resident name: Dr. Megan Caudill
Email: megan.caudill@ufl.edu

Faculty Name: Dr. Serena Craft
Email: crafts@ufl.edu

Resident name: Dr. Erin Graham
Email: erinschellinger@ufl.edu

Faculty Name: Dr. William Craft
Email: craftw@ufl.edu

Resident name: Dr. Marley Iredale
Email: marley.iredale@ufl.edu

Faculty Name: Dr. Michael Dark
Email: darkmich@ufl.edu

Resident name: Dr. Albert Jeon
Email: ajeon@ufl.edu

Faculty Name: Dr. Lisa Farina
Email: farinal@ufl.edu

Resident name: Dr. Ming Lo
Email: loming@ufl.edu

Faculty Name: Dr. Ian Hawkins
Email: ianhawkins@ufl.edu

Resident name: Dr. Bryce Miller
Email: miller.bryce@ufl.edu

Faculty Name: Dr. John Roberts
Email: john.roberts1@ufl.edu

Appendix B: Other Information

Basic Safety Rules for Residents and Clerkship Students on Necropsy Floor:

Anatomic Pathology clerkship students, residents and visiting residents scheduled for necropsy rotations must adhere to the following procedures at all times:

1. Protective attire including calf-high waterproof boots, apron and gloves are to be worn when on the necropsy floor to perform necropsies. Tissues should not be handled without protective gloves. Scrubs or coveralls will be laundered by Anatomic Pathology. Boots should be scrubbed with Surf-cide solution prior to exiting the necropsy floor. Cleaned boots should be left on shelves outside the back door of the necropsy hallway. Please do not leave boots on the floor in the locker rooms.
2. No watches, visible necklaces or dangling earrings may be worn on the necropsy floor, unless approved by the pathologist on service.
3. All personal items, such as cellular phones, laptops, backpacks, etc., must be left in a locker room prior to entry. They may be enclosed in a protective device and brought onto the floor with the permission of the pathologist on duty.
4. PAPRs (Powered Air Purifying Respirators) are available for your use on the floor. In cases where zoonotic diseases are suspected, the pathologist may mandate that all students wear a PAPR. At all other times, PAPRs are available for your use, if you elect to wear one. You may wish to wear a PAPR at all times on the necropsy floor if you are pregnant, have an immunosuppressive condition or are taking immunosuppressive medications, but you should clarify with your personal physician. PAPRs may also be worn if you are sensitive to the smell on the floor. Surgical masks are also available for your use, if desired.
5. Knives are to be used only for dissection purposes and must be placed into knife sheaths when not in use, particularly when the prosector leaves the carcass for other areas of the necropsy facility.
6. Due to the nature of the procedure, the necropsy floor at times will be slippery, from dispersed fat, oils, blood, water and other substances. Care must be exercised when walking, moving carcasses and moving waste buckets about the floor or in and out of the holding cooler.
7. Students are not permitted to move animals by hoist. Use of the necropsy equipment is under the direct supervision of the necropsy assistants/pathologist/resident on weekdays, and under the supervision of the pathologist/resident during off-hours and weekends.
8. Clerkship students are not permitted to use the band saw at any time. Residents and pathologists must wear eye protection (goggles) at all times when using the band saw, and must direct tissue with the metal shield or the blocks of wood provided, not with the hands. Some pathologists may allow students to use Stryker saws to remove brains from small animals. Students should wear a surgical mask and eye protection when using the Stryker saw.
9. In addition to the necropsy service manager, OPS employees will be available to assist during some portions of the work week in the cleaning of the necropsy facilities and equipment. They will wear protective attire as outlined in paragraph 1.

10. At no time should a necropsy be performed alone by an unaccompanied clerkship student.
11. All injuries should be reported immediately to the Anatomic Pathology service supervisor or senior pathologist on duty for immediate assessment and treatment.
12. If formalin or Klotz contacts your skin, wash with plenty of soap and water. If formalin or Klotz contacts your eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor.
13. Unsafe or broken equipment should be reported immediately to the necropsy assistant or service supervisor.
14. Used scalpel blades, razor blades, and needles should be discarded into sharps containers.
15. Animal parts for teaching and/or research purposes are not to be removed from the necropsy laboratory without special permission from the Service Chief.
16. Eye protection must be used when using cleaning solution.
17. No food or beverages are allowed at any time in the Necropsy suite.