Veterinary Anatomy, VETM*3070

Fall/Winter 2015-2016

2.0 Credits

Calendar Description

An introduction to comparative, topographical anatomy, primarily of *5* domestic mammals: cat, dog, horse, sheep, and cow. Full dissections of these species are related to the living animal and to imaging, to form the basis for future studies in clinical morphology. Students are introduced to the major anatomical systems and to the regions in detail: thorax, abdomen, head and neck, pelvis and perineum, and limbs. Active learning, problem solving, communication skills and the integration of material across concurrent courses are fostered.

Course co-Coordinators and Instructor

Dr. Jeff Thomason – Systems, Head and Neck and Limbs Instructor
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Dr. Matt Vickaryous – Pelvis and Perineum Instructor.
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Instructors

Dr. Pavneesh Madan – Thorax and Abdomen Instructor
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Dr. Stephanie Nykamp – Imaging Instructor and coordinator of the imaging component – snykamp@ovc.uoguelph.ca
Dr. Brigittte Brisson – Pre-surgery instructor and coordinator of that component – bbrisson@uoguelph.ca
Ms. Emily Gilbert – CNS Instructor – gilberte@uoguelph.ca
Mr. Roman Poterski – Lab Instructor, Technician and Preparator.
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Mr. David Robinson, Lab Instructor, Technician and Preparator.
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Mr. Josh Antunes – Graduate Teaching Assistant in the Dissection Labs, jantunes@uoguelph.ca

Administrative Information

For questions regarding academic consideration, continuation of study, academic misconduct, safety, confidentiality, and experiential learning involving use of animals, please refer to the Phase 1 information on the OVC website.

Course Structure and Objectives

Primary Goals

During this course you will achieve an understanding of the functional anatomy of the dog, cat, sheep, horse and cow, and will that be able to integrate that knowledge between cadaver material, live animals, and images. You will also learn basic skills to be used later in surgery. All of the material can be used in concurrent and future courses in the basic sciences and clinical studies, and for comparative study of other mammals and vertebrates.

Your learning in this course is organized into 4 components, each of which is presented in a different way, and more-or-less concurrently: (1) Dissection, (2) Live Animal, (3) Imaging, and (4) Principles of Surgery.

1. Dissection components

Objectives

At the end of this course you will be able to:

- Identify a selection of grossly visible anatomical structures (which are named in the course notes and manuals) in five domestic animals: horse, cow, sheep, dog and cat.
- Describe the gross appearance and distribution of each anatomical **System**—nervous, musculoskeletal, alimentary, cardiovascular and lymphatic, genitourinary, and respiratory—and of the endocrine organs and skin and its derivatives (hair, horns, hooves, and claws).
- Identify and describe the detailed anatomy of each **Region** of the body—thorax, abdomen, head and neck, pelvis and perineum and limbs—and the components of each System that are found within them.
- Describe the relationship between structure and function of the alimentary, respiratory, cardiovascular and musculoskeletal organs.
- Use the correct anatomical terminology for directions, planes of the body, and the structures that you have seen.

Presentation

This component will usually consist of 2 lectures and 2 dissection laboratories per week (with some variation among weeks).

The order of presentation through the course is largely by body **Region**: (1) Thorax, (2) Abdomen, (3) Head and Neck, (4) Pelvis and Perineum, (5) Hind Limb and (6) Forelimb.

Lab manuals (on Courselink) lead you through the dissections on each region. You will be allowed to focus your dissection on any of the species available, but are responsible for knowing the anatomy of all of them. You are encouraged to teach 'your' species to other members of your practice group who choose to work preferentially on other species, and learn from them in turn.

Videos of each lab are also available on Courselink. They show you how to do the dissection, and you are encouraged to view them ahead of time. In case you can't, we will also show the relevant video at the beginning of each lab.

The lectures will either introduce upcoming dissections, or will describe concepts and **Systems** relevant to the region, and notes on them are on Courselink.

Your En Campus schedule will tell you which Region is current, and which lecture or lab within that Region is on a given day.

This material will be tested in the formative *vivas* (oral tests) and December bellringer, and in the bellringer and written parts of the summative Final exam.

2. Live Animal component

Objectives

At the end of this course you will be able to:

- Describe and identify on a living animal the topographical relationships among

organs in the body cavities and the normal changes in these relationships during life.

- Identify visible and palpable landmarks on the live animal of each species, and indicate their relevance to the physical exam.

This component is largely self-taught, and asks you to integrate knowledge gained from the dissection labs with that learned in Clin. Med. 1 in how to do a physical exam.

A Live Animal Manual (on Courselink) lists all of the landmarks/structures we expect you to know and why, and complementary videos show you exactly how and where to find each one.

Independent study time is provided in the En Campus schedule for you to combine the live-animal exercises in Clin Med 1 and Anatomy. You will be informed how to book animals for these exercises. You do not necessarily have to use the times indicated – they are in the schedule just to make sure you have time in your day for the exercises.

There are review labs in December and March, for you to verify your knowledge, and the material is tested in stations that are part of the OSCE Final exam in Clin Med 1.

3. Imaging component

Objectives

At the end of this course you will be able to:

- Identify various tissues and structures on diagnostic images, and explain the basic biophysical reasons for their appearance.

This component allows you to apply your growing knowledge of anatomy to the recognition of structures visible on radiographic images (and perhaps a few from other imaging modalities). The emphasis is on recognition of what you see, not on diagnosis, which will come in later years.

Twelve lectures are scattered throughout the course, first to introduce the principles of imaging, then to lead you through the basic interpretation of images of each region.

Several radiographs (and the occasional CT or MRI scan) will be on display in each lab session, to illustrate the region being dissected. Spend a few minutes during each lab to look at them.

On Courselink, you will find a file called Imaging Question Sheet (under the Imaging module). Print it off and use it to interpret each and every image you see in lab during the year.

The same sheet will be used to examine your ability to read previously unseen images during the Imaging part of the Final exam. There will also be some Imaging questions on the Final written exam

4. Principles of Surgery (PoS) component

Objective

- To introduce instrument handling and basic suture techniques in preparation for Phase 2 and 3 surgical lectures and training laboratories.

Instruction will consist of 3 formal lectures, self-directed website study (using the roadmap provided in Courselink and the scheduled independent study times), a self-directed suture exercise (using the mastery list provided in Courselink), and 1 practical laboratory session.

This material will be examined in stations that are part of the OSCE Final exam in Clin Med

1. There will also be some PoS questions on the Final written exam

Evaluation

The philosophy of evaluation in this course follows the formative-summative model, in which midterms are for feedback on your progress, rather than marks, and the real testing and most of the marks come at the end.

Midterms (descriptions will be posted on the Courselink site).

Item	Worth %
Mini Quiz (thorax, for feedback only)	0
Viva Voce - oral test in groups (thorax + abdomen, dissection)	2 (OPF)*
Viva Voce - oral test in groups (head and neck)	2 (OPF)*
Bellringer 1 (comprehensive to date) – End of Fall semester	25
Viva Voce - oral test in groups (pelvis)	2 (OPF)*
Viva Voce - oral test in groups (osteology and limbs)	2 (OPF)*
Total of midterm marks	**33%**

* These midterms are graded as outstanding/pass/fail (OPF). **Outstanding = 2 marks (100%); Pass = 1.2 marks (60%); Fail = .5 mark (25%).** *The aim of all of the vivas is to give you feedback on your progress rather than to contribute greatly to your mark.*

Finals (descriptions will be posted on Courselink)

Final lab exam. worth 42%

This will have 4 components:

- Live animal test worth 6%
- PoS test worth 3 %
- Imaging test worth 10%
- Bellringer 2 worth 23%

Final Written combined exam worth 25%

The whole exam will include sections on Anatomy, Histology, and Physiology, all marked separately. The anatomy section contributes only to this course, and has questions from the Dissection, Imaging and PoS components.

Total of Final marks **67%**

Your marks on these assignments and exams must meet the following two criteria:

1. The sum of your marks on the 2 bellringers must exceed 28.8 (i.e., >60% of the maximum of 48 marks). If your marks do not meet this criterion, an incomplete grade will be submitted and remediation will be required. To successfully complete remediation, a mark of 60% or better must be achieved in a comprehensive *viva voce* at a time to be arranged with the course coordinator. If, after remediation, you still do not have the necessary 60%, you will be considered to have failed to meet this criterion.
2. You must gain 60% or better on the Written anatomy component of the Final exam. If your marks do not meet this criterion, an incomplete grade will be submitted and remediation will be required. Remediation will comprise gaining more than 60% on

a similar written exam. If, after remediation, you still do not have the necessary 60%, you will be considered to have failed to meet this criterion.

If your marks do not meet either of criteria 1 or 2 after remediation, a grade of 49 (or less if your marks do not add to 49) will be submitted and the matter sent for academic review.

Academic consideration If you miss an assignment, please consult with Dr. Peter Conlon before coming to Dr. Thomason. In the event that an assignment is missed for a reason that is recognized as valid by the University and the College, one of the following options will be exercised: **1**, If you miss any *viva voce* tests, the weighting of your other midterm marks midterms will be increased; **2**, For the midterm bellringer a make-up *viva voce* test will be taken within 30 days; **3**, If any component of the final exams is missed, the matter will be referred to Academic Review.

Books

- ***Strongly recommended:*** **Textbook of Veterinary Anatomy. Dyce K.M., Sack W.O. and Wensing C.J.G. *Fourth Edition*, W.B. Saunders, Philadelphia, 2010. Available in OVC bookstore.**

- ***Recommended Atlas:*** **Anatomy of the Domestic Animals. Pasquini, Spurgeon, & Pasquini. 7th edition. SUDZ Publishing. Available in OVC bookstore**

- **Lab manual:** The several parts are available on Courselink.
  Option 1: You are welcome to print a copy each.
  Option 2: Print one copy only and send it to M&T for photocopying for the whole class (the class officers will need to organize this option).

- ***Other resources* –** and there are many – will be posted on the Courselink, or you can locate them on the internet for yourselves.
  Example 1: 'How to' videos are posted for each dissection lab. They will be shown at the beginning of each lab, but you can view them beforehand if you want, and also use them for review.
  Example 2: Many other veterinary colleges post useful materials that may augment those provided in this course.

- **Course Notes and/or Powerpoints** will be posted on Courselink at the instructors' discretion. The two printing options under 'Lab Manual' apply to the Course Notes as well.