

Veterinary Anatomy, VETM*3070

Fall/Winter 2013-2014

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 Coordinator and Instructor

Dr. Jeff Thomason – Systems, Head and Neck and Limbs Instructor

Ext. 54934; Room 2604; E-mail: jthomaso@ovc.uoguelph.ca

Instructors

Dr. Pavneesh Madan – Thorax and Abdomen Instructor

Ext 54480, Room 3605, E-mail: pmadan@uoguelph.ca

Dr. Matt Vickaryous – Pelvis and Perineum Instructor.

Ext. 53871. E-mail: mwickary@uoguelph.ca

Ms. Emily Gilbert – CNS Instructor

E-mail: gilberte@uoguelph.ca

Ms. Olutobi (Tobi) Oluwole – live animal and lab instructor

E-Mail: ooluwole@uoguelph.ca

Mr. Roman Poterski – Lab Instructor, Technician and Preparator.

Ext 54240; Room 1620, rpotersk@uoguelph.ca

Mr. David Robinson, Lab Instructor, Technician and Preparator.

Ext 54240; Room 1620, djrobins@uoguelph.ca

Dr. Heather Chalmers and Dr. Alex zur Linden – Imaging Instructors

Ms. Cristin McCarty – Lab instructor, cmccarty@uoguelph.ca

Surgical Faculty and Residents – Introduction to surgical skills

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 Objectives

Primary Goal

During this course you will achieve an understanding of the integrated, functional anatomy of the dog, cat, sheep, horse and cow that can be used in concurrent and future courses in the basic sciences and clinical studies, and for comparative study of other mammals and vertebrates.

Specific Objectives

Knowledge

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 among the regions of the body of the endocrine organs and the anatomical systems—nervous, musculoskeletal, alimentary, cardiovascular and lymphatic, genitourinary, and respiratory.
- 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.
- 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 various tissues and structures on diagnostic images, and explain the basic biophysical reasons for their appearance.

Skills

You will learn and practice:

- The correct surgical way to hold and use scalpel and forceps (and other instruments as necessary).
- A selection of sutures to be used later in surgery.

Attitudes

- You will show, at all times, professional respect towards your classmates, the anatomy instructors and staff, and towards the cadavers that will be of utmost benefit to your education.

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 D2L site)

<u>Item</u>	<u>Worth %</u>
Mini Quiz (thorax, for feedback only)	0
<i>Viva Voce</i> - oral test in groups (thorax + abdomen)	3 (OPF)*
<i>Viva Voce</i> - oral test in groups (head and neck)	3 (OPF)*
Bellringer 1 (comprehensive to date) – End of Fall semester	20
<i>Viva Voce</i> - oral test in groups (pelvis)	3 (OPF)*
<i>Viva Voce</i> - oral test in groups (osteology and limbs)	3 (OPF)*
Total of midterm marks	32%

* These midterms are graded as outstanding/pass/fail (OPF). **Outstanding = 3 marks (100%); Pass = 2.1 marks (70%); Fail = 1 mark (33.3%).** *The aim of all of the midterms 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. **44%**

This will have 3 components:

- A live animal test, including assessment of your use of instruments and suturing ability, worth 12%
- A radiology test worth 12%
- Bellringer 2 worth 20%

Final written combined exam. The exam will include sections on Anatomy, Biochemistry, Histology, and Physiology, all marked separately. The anatomy section contributes only to this course and is worth: **24%**

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 24 (i.e., >60% of the maximum of 40 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 each of the Live animal, Radiology, and Written components of the Final exam. If your marks do not meet this criterion, an incomplete grade will be submitted and remediation will be required for each component in which a mark lower than 60% is obtained. Remediation will comprise gaining more than 60% on a test of the same form as the original component. If, after remediation, you still do not have the necessary 60% on any remediated component, 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.

Bonus: If your attitude is fully professional for the duration of this course you will receive an automatic bonus mark of 1%. You will be made aware of any action that forfeits you this mark.

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.

Schedule

The following tables list the lectures, dissection labs and live animal demonstrations by the name and number that appear in the Phase 1 Schedule. The first table gives you the lecture or lab title (for reference to handouts or manuals) and the instructors' initials. Please consult the Phase 1 Schedule for dates, times and rooms of each activity. (If the order of lectures or labs is different, go by the Phase 1 Schedule, rather than the order here.)

Lectures	Lecture title	Instr.	Labs	Lab title
	Introduction	JT	Osteol Lab 1	Osteology (verts+ribs) & PNS
	Peripheral nervous system	JT	Thorax Lab 1	Thorax wall
Thorax 1	Thorax wall	PM	Thorax Lab 2	Thorax viscera
Thorax 2	Thorax viscera	PM	Thorax Lab 3	Lung
Thorax 3	CV/Respiratory systems	PM	Thorax Lab 4	Heart
Image 1	Introduction to imaging	HC	Th. quiz	Thorax review and quiz
Thorax 4	Lung	PM	Abd Lab 1	Abdomen Wall
Thorax 5	Heart	PM	Abd Lab 2	Viscera in situ
Image 2	X-ray physics	HC		Live Only (no dissection)
Image 3	Radiation safety	HC	Abd Lab 3	Rumen & celiac
Abd 1	Abdomen wall	PM	Abd Lab 4	Equine colon/cranial mesenteric
Abd 2	Carnivore viscera	PM	Abd Lab 5	Abdomen UG
Abd 3	Equine abdomen	PM		Live Only (no dissection)
Abd 4	Abdomen UG	PM	Th/Abd review	Review thorax & abdomen
Abd 5	Rumen & celiac	PM	Th/Abd viva	Thorax & Abdomen viva
Abd 6	Topographic anatomy	PM	H&N Lab 1	Neck
Image 4	Thorax and Abdomen	AZ	H&N Lab 2	Face
Image 5	Principles of US	HC	H&N Lab 3	Nose
Abd 7	Abdomen topography and Q&A	PM	H&N Lab 4	Mouth
H&N 1	Intro to head	JT	H&N Lab 5	Larynx
H&N 2	Neck	JT	H&N Lab 6	Brain
H&N 3	Face	JT	H&N Lab 7	Senses
H&N 4	Nose	JT	H&N Review	Review H&N
H&N 5	Mouth	JT	H&N Viva	Head and Neck Viva
H&N 6	Larynx & pharynx	JT	Gen Rev	General Review
H&N 7	Brain & spinal cord	EG	Anat Bell	Fall semester Bellringer
H&N 8	Brain 2	EG		
H&N 9	Cranial nerves	JT		
H&N 10	Senses	JT		
Image 6	Advanced imaging	HC		
Image 7	Advanced imaging	HC		
	Endocrine organs	JT		
	Review: Independent time to prepare questions for Q & A	-		
	Review: General Q & A in class	JT		
December Break				
Limbs 1	Osteology of limbs	JT	Limb Lab 1	Osteology of the limbs
Pelvis 1	Intro to Pelvis	MV	Pelvis Lab 1	Intro to Pelvis
Pelvis 2	Pelvic canal	MV	Pelvis Lab 2	Pelvic canal
Pelvis 3	Female UG	MV	Pelvis Lab 3	M&F UG 1
Pelvis 4	Male UG	MV	Pelvis Lab 4	M&F UG 2
Pelvis 5	Udder	MV	Pelvis viva	Pelvis viva
Limbs 2	Rump and Hip	JT	Indep	Indep: Prepare for limb dissection
Limbs 3	Stifle	JT	Limb Lab 2	Rump & Hip

Limbs 4	Crus to digit	JT	Limb Lab 3	Stifle
Limbs 5	Hoof	JT	Limb Lab 4	Crus to digit
Image 8	Anatomy - Equine Digit/Fetlock	HC	Limb Lab 5	Hoof
Image 9	Anatomy - Oblique radiographs	HC	Review	Review hindlimb, prepare for forelimb
Image 10	Anatomy - SA pelvic limb	HC	Limb Lab 6	Brachial synsarcosis & plexus
Limbs 6	Brachial synsarcosis & plexus	JT	Limb Lab 7	Shoulder and arm
Limbs 7	Shoulder and arm	JT	Limb Lab 8	Carpus and paw
Limbs 8	Carpus and paw	JT	Review	Review limbs
Image 11	Anatomy - SA thoracic limb	HC	Gait Lab	Gait Lab
Image 12	Anatomy - Equine Tarsus/Carpus	HC	Limb viva	Limbs viva
Limbs 9	Biomechanics of locomotion	JT		
Limbs 10	Review Q&A session	JT		
Image 13	Imaging Question & answer	HC		
	General wrap-up and course evaluation	JT		

Live Animal Exercises

In these you will identify relevant anatomical landmarks on the live animal, as a means of transferring your knowledge of the anatomy of a cadaver to the living case. See the descriptive file on Courselink for details of what you will learn in each exercise. Instruction will be given in class as to how the live animal exercises will proceed. There is considerable overlap with the Clinical Medicine 1 labs, and you may do some exercises for each course simultaneously for efficiency.

SA=small animal, LA = large animal

1	LA landmarks
2	SA thorax, landmarks
3	LA thorax
4	LA abdominal wall
5	Cow abdomen
6	Horse abdomen
7	LA head and neck
8	Bull, genitalia
9	Cow, genitalia and udder
10	LA rump and stifle
12	LA hock
13	LA distal fore limb
11	SA hindlimb
14	SA forelimb
15	Review SA
16	Review LA

Come to Building CS2 at the scheduled time in Week 2 and you will be given further instructions on how the Live Animal Exercises will work. (Finding CS2 is your first test.)