

# VM3012: ANIMAL BODY

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## Effective Term

Semester A 2023/24

## Part I Course Overview

### Course Title

Animal Body

### Subject Code

VM - Jockey Club College of Veterinary Medicine and Life Sciences

### Course Number

3012

### Academic Unit

Infectious Diseases and Public Health (PH)

### College/School

Jockey Club College of Veterinary Medicine and Life Sciences (VM)

### Course Duration

One Semester

### Credit Units

18

### Level

B1, B2, B3, B4 - Bachelor's Degree

### Medium of Instruction

English

### Medium of Assessment

English

### Prerequisites

Completion of all BVM Year 2 courses with a C grade or above

### Precursors

Nil

### Equivalent Courses

Nil

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

This course is designed to enable students to understand the principles of veterinary anatomy at the gross, microscopic, and ultrastructural levels in species relevant to the local context, including carnivores, swine, ruminants, equines, birds,

and fish. The course emphasizes developmental anatomy to the extent that it reflects determination of adult form, species differences, and common congenital malformations. Radiologic and related imaging techniques are used throughout the course to assist in the understanding of normal structural anatomy. Understanding of the anatomic basis of common surgical procedures introduced during tutorials is achieved during the various dissection procedures. The course is based on tutorials with significant emphasis on practical laboratories. Lectures and modules complement student learning.

The course uses a regional approach with emphasis on relevant organ systems, “finishing” each system within a finite time. The concept of an organ system as various organs collaborating to perform a common function, the constant balancing of basic concepts of body compartments, regional spatial organisation of organ systems, multiple levels of structural organisation, and the anatomical and basic physiological bases for physical diagnosis and radiological diagnosis is a major integrating goal for the course. Early in the course there is a basic understanding of the structure and function of the cardiovascular system, peripheral nervous system, and general concepts of the central nervous system. These systems are developed and integrated throughout the course (as they are throughout the body). In histology, students identify the basic tissues that comprise any given organ and the cells that comprise each tissue. Based on observations of cellular and tissue specialisations within an organ, students deduce the functional specialisation of an organ.

### Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1 Apply a conceptual framework that includes systems organization, positional relationships, body compartments, developmental history, imaging findings and information retrieval in order to demonstrate an understanding of the animal body for different species including cats, dogs, pigs, ruminants, horses, birds and fish as well as marine and freshwater organisms of commercial value.		x		
2 Demonstrate at gross, microscopic and ultrastructural levels, an understanding of relationships in organ systems, tissues, cells and cellular organelles in order to show how an animal is arranged as a functional whole.		x		
3 Explain the developmental history leading to an organ system’s adult form and identify major developmental differences that occur between the organ systems of different animal species.		x		
4 Outline the path of substances in the body from their point of origin to their target organ(s) and their return or excretion route, e.g. blood, lymph, ingesta, inhaled air, secretions and excretions in order to demonstrate an understanding of how organ systems communicate.		x		
5 Within a body region, identify organs, their gross features and relationships in three spatial planes and for different animal species, using anatomic specimens, virtual models, digital radiographs, computed tomographic and magnetic resonance imaging images.		x		
6 Correlate gross and microscopic anatomy and relate the microscopic/ultrastructural appearance to cellular function.		x		

7	Identify, on histological sections, the four basic tissues (epithelial, muscle, connective, nervous) that comprise an organ.		x		
8	Explain how modifications of tissues and their cells relate to tissue function and to the function of an organ as a whole.		x		
9	Outline the spatial and functional relationships of an organ system within a body compartment, the arrangement of structural interfaces between body compartments, and how a body system traverses through multiple compartments, in order to demonstrate an understanding of anatomic structural organization.		x		
10	Describe how positional relationships in the body are maintained, and identify the connective tissue structures responsible for maintaining the position of each organ in a body region.		x		
11	Outline the relationship of the circulatory and nervous systems to the musculoskeletal framework in order to demonstrate an understanding of positional relationships.		x		
12	Draw a concept map of the central and peripheral nervous systems including relationships to structures within a body region and autonomic control of specific organs in order to demonstrate an understanding of its anatomy and function.		x	x	
13	Identify skeletal and muscular relationships of the body wall for each body region in order to explain topographical relations that may be used to locate underlying structures during routine clinical examination and interventions such as regional anaesthesia or centesis.		x		
14	Identify significant muscle groups in a body region and their anatomical attachments in order to explain their function.		x		
15	Apply an understanding of anatomy in order to explain and demonstrate the structural basis for physical examination procedures of the thorax and abdomen, neurological examination and orthopaedic examinations in the cat, dog, ruminant and horse.			x	
16	Explain the anatomical basis and anatomic considerations of diagnostic procedures such as biopsy, blood or fluid-sampling, common surgical approaches to body cavities and body regions, organ removal and contrast studies in imaging.		x	x	

17	Demonstrate teamwork skills relevant to professional practice and competence: <ul style="list-style-type: none"> <li>· Actively participate in small-group study sessions,</li> <li>· Contribute to defining and achieving team objectives,</li> <li>· Work and communicate effectively and empathetically with team members.</li> </ul>		x	x	x
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**A1: Attitude**

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

**A2: Ability**

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

**A3: Accomplishments**

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

**Teaching and Learning Activities (TLAs)**

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Systematic consideration	1, 2, 3, 4, 9, 10, 11	3.5
2	Practical Classes*	Dissections, histology, radiographic anatomy	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 17	9
3	Tutorials*	Problem-based learning	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17	5.5

**Additional Information for TLAs**

\* These are participation and engagement-required TLA sessions. Students can be absent from no more than one of these sessions per course per semester. Additional absence will constitute a course failure.

**Assessment Tasks / Activities (ATs)**

	ATs	CILO No.	Weighting (%)	Remarks
1	First Quarter Quiz	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16	5	
2	Midterm written examination	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	10	
3	Spot test 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	10	
4	Spot test 2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	25	
5	Participation assessment#	17	10	See note below. #

**Continuous Assessment (%)**

60

**Examination (%)**

40

**Examination Duration (Hours)**

3

**Additional Information for ATs**

# A failing grade (<50%) in the Participation Assessment will lead to an overall F grade for the entire course.

**Assessment Rubrics (AR)**

**Assessment Task**

1. First quarter quiz

**Criterion**

Ability to name and describe the organs and tissues of the body, how they develop, and interspecies differences

**Excellent (A+, A, A-)**

Will exhibit a high level of competence in understanding, explaining, and integrating the knowledge in written format

**Good (B+, B, B-)**

Will exhibit a good level of competence in understanding, explaining, and integrating the knowledge in written format

**Fair (C+, C, C-)**

Will exhibit a basic level of competence in understanding, explaining, and integrating the knowledge in written format

**Failure (F)**

Will exhibit lack of competence in understanding, explaining, and integrating the knowledge in written format

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**Assessment Task**

2. Midterm written examination

**Criterion**

Ability to describe the organs and tissues that would be affected in disease situations and by common surgical procedures.

**Excellent (A+, A, A-)**

Will exhibit a high level of competence in understanding, explaining, and integrating the knowledge in written format

**Good (B+, B, B-)**

Will exhibit a good level of competence in understanding, explaining, and integrating the knowledge in written format

**Fair (C+, C, C-)**

Will exhibit a basic level of competence in understanding, explaining, and integrating the knowledge in written format

**Failure (F)**

Will exhibit lack of competence in understanding, explaining, and integrating the knowledge in written format

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**Assessment Task**

3. Spot test 1 &2

**Criterion**

Ability to identify, name and describe functions of the organs that have been dissected and the tissues that have been observed

**Excellent (A+, A, A-)**

Will exhibit a high level of knowledge about the dissected and observed structures

**Good (B+, B, B-)**

Will exhibit a good level of knowledge about the dissected and observed structures

**Fair (C+, C, C-)**

Will exhibit a basic level of knowledge about the dissected and observed structures

**Failure (F)**

Will exhibit lack of knowledge about the dissected and observed structures

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**Assessment Task**

4. Participation Assessment\*

**Criterion**

Ability to work well in a team environment, with commitment to participation in group work. Demonstration of effective self-management of learning.

**Excellent (A+, A, A-)**

Fully engaged with team, assisting others and requesting assistance. Completes all out of class tasks. Always punctual.

**Good (B+, B, B-)**

Usually engaged with team, assisting others and requesting assistance. Usually completes out of class tasks. Usually punctual.

**Fair (C+, C, C-)**

Sometimes engaged with team, assisting others and requesting assistance. Sometimes completes out of class tasks. Sometimes punctual.

**Failure (F)**

Rarely or never engaged with team, assisting others or requesting assistance. Rarely or never completes out of class tasks. Rarely or never punctual. Abusive, disruptive or offensive behaviour, bullying.

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**Assessment Task**

5. Final Examination

**Criterion**

Ability to identify, name and describe the organs and tissues of the body, how they develop, and interspecies differences

**Excellent (A+, A, A-)**

Will exhibit a high level of competence in understanding, explaining, and integrating the knowledge in written format

**Good (B+, B, B-)**

Will exhibit a good level of competence in understanding, explaining, and integrating the knowledge in written format

**Fair (C+, C, C-)**

Will exhibit a basic level of competence in understanding, explaining, and integrating the knowledge in written format

**Failure (F)**

Will exhibit lack of competence in understanding, explaining, and integrating the knowledge in written format

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## Additional Information for AR

### Mark Range

The following is the mark range for each letter grade that must be used for assessment of any examinations or coursework of BVM courses (VM- and GE-coded) offered by PH and VCS.

Letter Grade	Mark Range	Letter Grade	Mark Range
A+	$x \geq 85\%$	C+	$55 \leq x < 60\%$
A	$80 \leq x < 85\%$	C	$50 \leq x < 55\%$
A-	$75 \leq x < 80\%$	F	$x < 50\%$
B+	$70 \leq x < 75\%$		
B	$65 \leq x < 70\%$		
B-	$60 \leq x < 65\%$		

Where x is an un-rounded decimal and the cutoff values are integers, such that for example if the aggregate course grade  $x = 74.99999$ , then  $x < 75$  and it is converted to a B+. according to the table above.

## Part III Other Information

### Keyword Syllabus

Osteology, arthrology, myology, splanchnology, respiratory system, cardiovascular system, urinary system, reproductive system, neurology, eye, ear, sensory organs, integument.

### Reading List

#### Compulsory Readings

	Title
1	Singh, B. (2018) Dyce, Sack and Wensing' s Textbook of Veterinary Anatomy. 5th Edition. Saunders (Elsevier).
2	Evans, H.E. & De Lahunta, A. (2016). Guide to the Dissection of the Dog. 8th Edition. Saunders (Elsevier).
3	Bacha, W.J. and Bacha, L.M. (2012) Color Atlas of Veterinary Histology 3rd Ed. Wiley-Blackwell
4	McGeady, T.A., Quinn, P.J., FitzPatrick, E.S., Ryan, M.T., Kilroy, D., Lonergan, P. (2017). Veterinary Embryology 2nd Ed. Wiley-Blackwell.
5	Hyttel, P., Sinowatz, F., and Vejlsted, M. (2010). Essentials of Domestic Animal Embryology. Saunders (Elsevier), Edinburgh.
6	Young, B., O' Dowd, G., Woodford, P., Wheater, P.R. (2014) Wheater' s Functional Histology 6th Ed. Churchill Livingstone/Elsevier (Philadelphia, PA)
7	Thrall, D.E. (2018) Textbook of Veterinary Diagnostic Radiology 7th Edition. Saunders (Elsevier)
8	Coulson, A. & Lewis, N. (2011) An Atlas of Interpretative Radiographic Anatomy of the Dog and Cat 2nd Edition. Wiley-Blackwell
9	Skerritt, G. (2018) King' s Applied Anatomy of the Central Nervous System of Domestic Mammals 2nd Edition, Wiley-Blackwell

#### Additional Readings

	Title
1	Hermanson, J., de Lahunta A., Evans, (2019) Miller and Evans' Anatomy of the Dog 5th Ed., Elsevier
2	De Lahunta A., Glass E.N., Kent M. (2020) Veterinary Neuroanatomy and Clinical Neurology 5th Ed. Elsevier
3	König, H. and Liebich, H.-G. (2020). Veterinary Anatomy of Domestic Animals: Textbook and Colour Atlas, 7th edition. Schattaver, Stuttgart
4	Butler JA, Colles CM, Dyson SJ, Kold SE, Poulos PW (2017) Clinical Radiology of the Horse 4th Ed. Wiley Blackwell