



University of Sadat City
Faculty of Veterinary Medicine
Dept. of Physiology
(2014-2015)



Physiology of Digestion, Metabolism and Energy (628P)

PhD COURSE SPECIFICATION

A. BASIC INFORMATION

University:	University of Sadat City
Faculty:	Veterinary Medicine
Program on which the course is given:	PhD in Veterinary Medical Sciences (physiology)
Department offering the Course:	Physiology
Course code:	628P
Course title:	Physiology of Digestion, Metabolism and Energy
Lecture (hr/week):	2
Practical (hr/week):	2
Course coordinator:	Prof. Dr. Said I. Fathalla

B. PROFESSIONAL INFORMATION

1) Overall aims of course

Distinguish basic and advanced knowledge and skills deeply of digestion mechanism in animals (simple and compound stomach) and poultry, energy balance and metabolic rate to improve body gain and production.

2) Intended learning outcomes of course (ILOs)

a) KNOWLEDGE AND UNDERSTANDING

By the end of this course, the graduate should be able to:-

- a.1. Point the salivary secretion, mastication and deglutition.
- a.2. Realize the gastric secretion, gastric mucosal barrier, motility, gastric evacuation and vomiting
- a.3. Make a distinction on pancreatic secretion and control of secretion.
- a.4. Make a distinction on hepatic secretion, gall bladder, control of bladder evacuation, jaundice.
- a.5. Elucidate the small & large intestine, digestive and absorptive functions.
- a.6. Elucidate the gastrointestinal motility and GIT hormones and defecation.
- a.7. Comprehend the energy balance and basal metabolic rate.
- a.8. Elucidate the control of food intake, obesity estimation of body fat.
- a.9. Comprehend the difference between digestion in simple and compound stomach animals.
- a.10. Recognize the comparison between metabolism in simple and compound stomach animals.

b) INTELLECTUAL SKILLS

By the end of this course, the student should be able to:-

- b.1. Evaluate rumen samples.
- b.2. Interpret stomach samples.
- b.3. Appraisal of saliva.
- b.4. Evaluate gastric juice.
- b.5. Judge pancreatic juice.
- b.6. Interpret intestinal juice.

PROFESSIONAL AND PRACTICAL SKILLS

By the end of this course, the student should be able to:

- c.1. Analyze of rumen samples.
- c.2. Analyze of stomach samples.
- c.3. Apply examination of saliva.
- c.4. Accomplish gastric juice examination.
- c.5. Assess the pancreatic juice.
- c.6. Accomplish of intestinal juice examination.

c) GENERAL AND TRANSFERABLE SKILL

By the end of this course, the student should be able to:

- d.1.** Work effectively as a member of a multidisciplinary team.
- d.2.** Appoint the essential ethical issues involved in scientific research.
- d.3.** Investigate new information and technologies.
- d.4.** Employ available presentation aids (e.g. Projectors or Data Show) to present clearly and effectively a scientific topic in a tutorial, a staff meeting or the yearly scientific day.

3) Topics and contents

Topic	No. of hours		
	Lect.	Pract.	Total
Salivary secretion , mastication and deglutition	10	-	10
Gastric secretion , gastric mucosal barrier , motility , gastric evacuation and vomiting	10	-	10
Pancreatic secretion and control of secretion	10	-	10
Hepatic secretion, gall bladder, control of bladder evacuation,	10	-	10
Small & large intestine , digestive and absorptive	10	-	10
Gastrointestinal motility , Defecation and GIT hormones	10	-	10
Digestion in ruminant	10	-	10
Energy balance and metabolic rate	10	-	10
Control of food intake, Estimation of body Gain and fat.	8	-	8
Evaluate and analysis of rumen samples	-	18	18
Evaluate and analysis of stomach samples	-	20	20
Examination of saliva	-	15	10
Examination of gastric juice	-	10	10
Examination of pancreatic juice	-	10	10
Examination of intestinal juice	-	15	10
Total hours	88	88	176

4) Teaching and learning methods

- a. Lectures.
- b. Practical.
- c. Self-learning activities.

d. Student assessment

a. METHODS:

- Ñ Written exam to assess knowledge, information and intellectual skills.
- Ñ Practical exam to assess professional and practical skills.
- Ñ Oral exam to assess knowledge and information and intellectual skills.

Ñ Student activities for assessing knowledge and general and transferable skills.

b. MATRIX ALIGNMENT OF THE MEASURED ILOs/ ASSESSMENTS METHODS:

	K.U (a)	I.S (b)	P.P.S (c)	G.S (d)
Written exam	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5,6		
Practical exam		1,2,3,4,5,6	1,2,3,4,5,6	
Oral exam	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5,6		
Student activities				1,2,3,4

c. WEIGHT OF ASSESSMENTS:

Assessment	Allocated Mark	Evidence
Final written exam	50%	Marked and signed written paper
Practical exam	20%	Marked and signed practical exam paper
Oral exam	20%	Signed list of oral exam marks
Student activities	10%	Assay, presentations, discussions, review

e. List of references

6.1. Essential textbooks

1-Berne, R.M. & Levy, M.N. (eds) 1996, *Principles of Physiology*, 2nd edition, Mosby, Sydney.

2- William O. Reece 2004, *Dukes' Physiology of Domestic Animals*, 12th edition, Cornell University Press

3- **Textbook of Medical Physiology (Guyton)2010**

4-**Text Book of Veterinary Physiology, Cunningham, Elsevier, 2007.**

5- **Keith B. 2013, Fish physiology**

6.3. Web sites

- Journal of dairy science
- Tropical animal health and production
- Journal of animal science
- Small ruminant research
- J. of applied physiology
- J. of veterinary physiology

* J. of comparative biochemistry & physiology

f. Facilities required for teaching and learning

- 7.1 Data-show.
- 7.2 Laboratory animals for experimental physiology.
- 7.3 Network for technology transfer.
- 7.4 Laboratory kits for experimental physiology.
- 7.5 Computer.

	Course coordinators	Head of department
Name	Prof. Dr. Said Ibrahim fathalla	Prof. Dr. Shaaban Gadallah
Signature		

Matrix alignment of course topics and ILOs

Topic	No. of hours /week		Total hours	Hours for Lect.	Hours for Pract.	ILOs			
	Lect.	Pract.				K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Salivary secretion , mastication and deglutition	2		10	10	-	1	3		1,3
Gastric secretion , gastric mucosal barrier , motility , gastric evacuation and vomiting	2		10	10	-	2	2- 4		1,4
Pancreatic secretion and control of secretion	2		10	10	-	3	5		1,2
Hepatic secretion, gall bladder, control of bladder evacuation,	2		10	10	-	4			1,3
Small & large intestine , digestive and absorptive	2		10	10	-	5	6		1,4
Gastrointestinal motility , Defecation and GIT hormones	2		10	10	-	6			1,4
Digestion in ruminant	2		10	10	-	1-2-3-4- 5-6-9-10	1		1,2
Energy balance and metabolic rate	2		10	10	-	8			1,3
Control of food intake, Estimation of body Gain and fat.	2		8	8	-	9			1,4
Evaluate and analysis of rumen samples		2	18	-	18		1	1	1,2
Evaluate and analysis of stomach samples		2	20	-	20		2	2	1,3

Topic	No. of hours /week		Total hours	Hours for Lect.	Hours for Pract.	ILOs			
	Lect.	Pract.				K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Examination of saliva		2	10	-	15		3	3	1,4
Examination of gastric juice		2	10	-	10		4	4	1,2
Examination of pancreatic juice		2	10	-	10		5	5	1,3
Examination of intestinal juice		2	10	-	15		6	6	1,4
Total			176	88	88				