Physiology of Blood and Immunity System (627P)

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:	**627P**
Course title:	**Physiology of Blood and Immunity System**
Lecture (hr/week):	**2**
Practical (hr/week):	**2**
Course coordinator:	**Prof. Dr. Said I. Fathalla**

B. PROFESSIONAL INFORMATION

1) Overall aims of course

Identify basic and advanced knowledge and skills in details of roles of blood components to improve body function and the defense system in the animal body 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. Identify the blood components and their functions.

a.2 Recognize the origin and mode of production of each blood component.

a.3. Indicate immune systems in the animal body.

a.4. Delimit the classification of immunity and its vital role in the animal body.

a.5. Enumerate the deviation of normal blood values and its impacts on animal health.

a.6. Clarify the blood coagulation and its disorders.

a.7. Delimit the blood groups in animals.

a.8. Recognize the role blood in defense of body .

b) INTELLECTUAL SKILLS

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

b.1. Identify the immunological parameters.

b.2. Investigate the RBCs, WBCs count.

b.3. Illustrate the hemoglobin and PCV estimation.

b.4. Outline the blood film examination.

b.5. Distinguish the differential leucocytic count.

b.6. Confirm the blood grouping test.

b.7. Analyze the blood coagulation test.

PROFESSIONAL AND PRACTICAL SKILLS

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

c.1 Examine the immunological tests (phagocytic activity, phagocytic index, and inflammatory markers)

c.2. Apply the RBCs, WBCs count.

c.3. Assign the hemoglobin and PCV estimation.

c.4. Explore blood film examination.

c.5. Customize the differential leucocytic count.

c.6. Process the blood grouping test.

c.7. Employ the technological means of blood coagulation test.

c) GENERAL AND TRANSFERABLE SKILL

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

d.1. Catigorize the communication effectively.
d.2. Assemble different resources for self-learning such as libraries, scientific periodicals, internet and various scientific associations.
d.3. Exploit in a research team.
d.4. Summarize the research results effectively.

3) Topics and contents

Topic	No. of hours		
	Lect.	**Pract.**	**Total**
Blood components	10	-	10
Red blood cells in different animals	10	-	10
White blood cells in different animals **(immunity)**	10	-	10
Hematopoiesis	10	-	10
complete blood count	10	-	10
Blood groups in animals	8	-	8
Blood coagulation	10	-	10
Coagulation disorders	10	-	10
Role of blood in **immunity**	10	-	10
RBCs and WBCs count	-	10	10
Differential leucocytic count	-	10	10
Blood film	-	10	10
Hemoglobin measurement	-	10	10
PCV measurement	-	10	10
Blood groups	-	10	10
Coagulation tests	-	10	10
Phagocytic activity and phagocytic index tests (immunity)	-	10	10
Evaluation of inflammatory markers (immunity)	-	8	8
total	**88**	**88**	**176**

4) Teaching and learning methods

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

d. Student assessment

a. METHODS:

- Written exam to assess knowledge, information and intellectual skills.
- Practical exam to assess professional and practical skills.
- Oral exam to assess knowledge and information and intellectual skills.
- 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	1,6,7		
Practical exam		1-2-3-4-5-6-7	1-2-3-4-5-6-7	
Oral exam	1-3-5-6-7	2-4-5-7		
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

a. 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

6.2. Web sites

- Tropical animal health and production
- Journal of animal science
- J. of applied physiology
- J. of veterinary physiology
- J. of comparative biochemistry & physiology

b. 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 I. 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)
Blood components	**2**		**10**	**10**		**1-2**	**2-3-4-5-6**		**2**
Red blood cells in different animals	**2**		**10**	**10**		**1**	**2**		**1,4**
White blood cells in different animals **(immunity)**	**2**		**10**	**10**		**1-3**	**2**		**1,2**
Hematopoiesis	**2**		**10**	**10**		**2**			**1,3**
complete blood count	**2**		**10**	**10**		**5**			**1,4**
Blood groups in animals	**2**		**8**	**8**		**1-7**	**6**		**1,4**
Blood coagulation	**2**		**10**	**10**		**6**	**7**		**1,2**
Coagulation disorders	**2**		**10**	**10**		**5-6**	**7**		**1,3**
Role of blood in **immunity**	**2**		**10**	**10**		**3-4-8**	**1**		**1,4**
RBCs and WBCs count		**2**	**10**		**10**		**2**	**2**	**1,2**
Differential leucocytic count		**2**	**10**		**10**		**5**	**5**	**1,3**
Blood film		**2**	**10**		**10**		**4**	**4**	**1,4**
Hemoglobin measurement		**2**	**10**		**10**		**3**	**3**	**1,2**
PCV measurement		**2**	**10**		**10**		**3**	**3**	**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)
Blood groups		**2**	**10**		**10**		**6**	**6**	**1,4**
Coagulation tests		**2**	**10**		**10**		**7**	**7**	**1,2**
Phagocytic activity and phagocytic index tests (immunity)		**2**	**10**		**10**		**1**	**1**	**1,3**
Evaluation of inflammatory markers (immunity)		**2**	**8**		**8**		**1**	**2/3/1-**	**4**
Total			**176**	**88**	**88**				