General Virology

(680M)

MVSc COURSE SPECIFICATION

A. BASIC INFORMATION

University:	**University of Sadat City**
Faculty:	**Veterinary Medicine**
Program on which the course is given:	**MVSc in Veterinary Medical Sciences (Virology)**
Department offering the Course:	**Virology**
Course code:	**680M**
Course title:	**General Virology**
Lecture (hr/week):	**1**
Practical (hr/week):	**2**
Course coordinator:	**Dr. Mohammed AboElkhair**

B. PROFESSIONAL INFORMATION

1) Overall aims of course

Upon successful completion of the course, the students will have the scientific background about virus structure and replication, their pathogenesis, host immune response against them, and their control. The students, also, will know how to deal with samples containing viral particles and the methods used for virus isolation.

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 nature of viruses, viral taxonomy and evolution.
a.2. Describe structures, replication, pathogenesis, and methods of control of viruses.
a.3. Recognize types of immunity against viral diseases
a.4. Clarify different types of vaccines used against viral diseases.

b) INTELLECTUAL SKILLS

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

b.1. Contrast to choose the suitable sample at proper time for viral diagnosis
b.2. Compare between viruses and other types of microorganisms.
b.3. Investigate the required measurements for prevention and control of viral diseases.
b.4. Analyze different types of vaccines

c) PROFESSIONAL AND PRACTICAL SKILLS

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

c.1. Employ suitable method to deal with clinical samples containing viral particles properly
c.2. Practice different methods used for virus isolation in clinical samples
c.3. Classify the vaccination program efficacy

d) GENERAL AND TRANSFERABLE SKILL

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

d.1. Prepare effectively as part of a team.
d.2. Create make use of library facilities and IT tools.
d.3. Explain appropriate computer / keyboard skills including word
d.4. Plane Processing, spreadsheets, presentation packages and graph plotting.

2) Topics and contents

Topic	No. of hours		
	Lect.	Pract.	Total
Introduction and history of virology	1	-	1
Virus Structure	2	-	2
Multiplication of viruses	4	-	4
Viral pathogenesis	5	-	5
Viral oncogenesis	2	-	2
Viral genetics and evolution	3	-	1
Virus epidemiology	2	-	2
Immunity against viral infections	4	-	4
Antiviral chemotherapy	2	-	2

Viral interference and interferons	**2**	**-**	**2**
Vaccination against viral diseases	**4**	**-**	**4**
Emerging viruses	**2**	**-**	**2**
Virus classification	**2**	**-**	**2**
Laboratory biosafety and introduction to diagnosis of viral diseases	**-**	**4**	**4**
Sampling and sample preparation	**-**	**8**	**8**
Virus isolation on ECEs	**-**	**18**	**18**
Virus isolation on tissue culture	**-**	**30**	**30**
Purification and concentration of viruses	**-**	**14**	**14**
Biological properties of viruses	**-**	**14**	**14**
Student presentation of a selected topic	**4**	**-**	**4**
Paper discussion	**5**	**-**	**5**
Total	**44**	**88**	**132**

3) Teaching and learning methods

4.1. Lectures.

4.2. Practical.

4.3. Self-learning activities.

4) Student assessment

a. METHODS:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills
4- Student activities	For assessment of 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	2,3,4		-
Practical exam		1	1,2,3	-
Oral exam	1,2,3,4	1,3,4		-
Student activities (assay, seminar, etc.)	1,2,3,4			**1-4**

c. WEIGHT OF ASSESSMENTS:

Assessment	**Allocated**	**Evidence**

	Mark	
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 assignments	**10%**	Representative samples of presented materials

5) List of references

6.1. Essential textbooks

- **Veterinary Virology. Murphy FA, et al. 1999 3rd eds.**
- **Veterinary virology. Fenner F, et al. 1993**
- **Principles of virology: molecular biology, pathogenesis and control of animal viruses.** 2nd eds. Flint et al. 2004
- **Veterinary Immunology An introduction.** Tizard, IR 2009 8th eds
- **Fields Virology.** Fields BN, et al. 2004.

6.2. Periodicals

- American Society of Microbiology
- Journal of Veterinary Microbiology
- Journal of Archives of Virology
- Journal of Virological Methods
- Journal of Virology
- Journal of General Virology
- Virus research Journal
- Virus genes Journal
- Vaccines Journal

6.3. Web sites

- **www.ncbi.nlm.nih.gov**
- **www.sciencedirect.com**

6) Facilities required for teaching and learning

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

	Course coordinators	Head of department

Name	Dr. Mohammed AboElkhair	Prof. Dr. Shaaban M. 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)
Introduction and history of virology	1	-	1	1		1			1-4
Virus Structure	1	-	2	2		2	2		1-4
Multiplication of viruses	1	-	4	4		2	2		1-4
Viral pathogenesis	1	-	5	5		2	1		1-4
Viral oncogenesis	1	-	2	2		2	1		1-4
Viral genetics and evolution	1	-	3	1		1	2		1-4
Virus epidemiology	1	-	2	2		2	1,3		1-4
Immunity against viral infections	1	-	4	4		3	3		1-4
Antiviral chemotherapy	1	-	2	2		2	3		1-4
Viral interference and interferons	1	-	2	2		3	3		1-4
Vaccination against viral diseases	1	-	4	4		4	3,4		1-4
Emerging viruses	1	-	2	2		1			1-4
Virus classification	1	-	2	2		1			1-4
Laboratory biosafety and introduction to diagnosis of viral diseases	-	2	4	-	4			1	1 ,4
Sampling and sample preparation	-	2	8	-	8		1	1	1,4
Virus isolation on ECEs	-	2	18	-	18			2	1,4
Virus isolation on tissue culture	-	2	30	-	30			2	1,4
Purification and concentration of viruses	-	2	14	-	14			2	1,4
Biological properties of viruses	-	2	14	-	14			3	1,4
Student presentation of a selected topic	1	-	4	4	-				1-4

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)
Paper discussion	**1**	**-**	**5**	**5**	**-**			**1**	**1-3**
Total			**132**	**44**	**88**				