



Special Virology

(681M)

MVSc COURSE SPECIFICATION

A. BASIC INFORMATION

University:	University of Sadat City
Faculty:	Veterinary Medicine
Program on which the course is given:	Master in Veterinary Medical Sciences (Virology)
Department offering the Course:	Virology
Course code:	681M
Course title:	Special Virology
Lecture (hr/week):	2
Practical (hr/week):	2
Course coordinator:	Dr. AbdelHameed Bazid

B. PROFESSIONAL INFORMATION

1) Overall aims of course

Upon successful completion of the course, the student will understand the basic concepts of virus taxonomy and general criteria of different virus families. The student should have knowledge of virus-host relationship of different virus families. The student should be able to differentiate between different virus families regarding diagnosis, epidemiology, prevention and control of viral infections.

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 viral taxonomy and different virus families
- a.2. Express knowledge about diseases caused by different virus families.
- a.3. Explain pathogenesis of viral diseases caused by different virus families
- a.4. Recognize control measures against viral diseases caused by various virus families

b) INTELLECTUAL SKILLS

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

- b.1. Differentiate between different types of viruses
- b.2. Detect mechanism of actions of different types of viruses.
- b.3. Detect the required measurements for prevention and control of viral diseases
- b.4. Group a suitable method for virus diagnosis

c) PROFESSIONAL AND PRACTICAL SKILLS

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

- c.1. Practice processing of clinical samples on arrival to laboratory for viral diagnosis and isolation
- c.2. use different methods and software to manipulate viral genome sequences for designing primers and construction of phylogenetic trees
- c.3. Apply serological tests used for detection of viral antigens or antibodies in clinical samples and analyze results Employ an effective method for virus control
- c.4. Practice some of molecular techniques used for identification of viruses

d) GENERAL AND TRANSFERABLE SKILL

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

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

2) Topics and contents

Topic	No. of hours		
	Lect.	Pract.	Total
Viral pathogenesis	4	-	4
Virus oncogenesis	4	-	4
Viral genetics and evolution	4	-	4
Virus classification and taxonomy	4	-	4
Family: <i>Poxviridae</i>	4	-	4

Family: <i>Herpesviridae</i>	6	-	6
Family: <i>Caliciviridae</i>	2	-	2
Family: <i>Circoviridae</i>	4	-	4
Family: <i>Picornaviridae</i>	4	-	4
Family: <i>Orthomyxoviridae</i>	6	-	6
Family: <i>Paramyxoviridae</i>	6	-	6
Family: <i>Rhabdoviridae</i>	4	-	4
Family: <i>Reoviridae</i>	4	-	4
Family: <i>Retroviridae</i>	4		4
Family: <i>Coronaviridae</i>	4		4
Family: <i>Bunyaviridae</i>	4		4
Family: <i>Birnaviridae</i>	4		4
Family: <i>Flaviviridae</i>	4		4
New emerging viruses	4		4
Student presentation of a selected topic	4		4
Paper discussion	4		4
Laboratory biosafety and introduction to diagnosis of viral diseases	-	4	4
Sampling and sample preparation	-	8	8
Virus isolation on ECEs	-	10	10
Virus isolation on tissue culture	-	16	16
Biological properties of viruses		12	12
Purification and concentration of viruses	-	8	8
Serological diagnosis of viral diseases	-	16	16
Molecular diagnosis of viral diseases	-	14	14
Total	88	88	176

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
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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		-
Practical exam			1,2,3,4	-
Oral exam	1,2,3,4	1,2, 3,4		-
Student activities (assay, seminar, etc.)	1,2,3,4			1-4

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 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. Abdel Hameed Bazid	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	I.S	P.P.S	G.T.S
						(a)	(b)	(c)	(d)
Viral pathogenesis	2		4	4		2	1,2		1-4
Virus oncogenesis	2		4	4		2	1,2		1-4
Viral genetics and evolution	2		4	4		2	2		1-4
Virus classification and taxonomy	2		4	4		1	1		1-4
Family: <i>Poxviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Herpesviridae</i>	2		6	6		2,3,4	1-4		1-4
Family: <i>Caliciviridae</i>	2		2	2		2,3,4	1-4		1-4
Family: <i>Circoviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Picornaviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Orthomyxoviridae</i>	2		6	6		2,3,4	1-4		1-4
Family: <i>Paramyxoviridae</i>	2		6	6		2,3,4	1-4		1-4
Family: <i>Rhabdoviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Reoviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Retroviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Coronaviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Bunyaviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Birnaviridae</i>	2		4	4		2,3,4	1-4		1-4
Family: <i>Flaviviridae</i>	2		4	4		2,3,4	1-4		1-4
New emerging viruses	2		4	4		2,3	1-4		1-4

Topic	No. of hours /week		Total hours	Hours for Lect.	Hours for Pract.	ILOs			
	Lect.	Pract.				K.U	IS	P.P.S	G.T.S
						(a)	(b)	(c)	(d)
Student presentation of a selected topic	2		4	4		2	1-4		1-4
Paper discussion	2		4	4		2	1,2,3,4		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	1,4
Virus isolation on ECEs		2	10		10			1	1,4
Virus isolation on tissue culture		2	16		16			1	1,4
Biological properties of viruses		2	12		12			1	1,4
Purification and concentration of viruses		2	8		8			1	1,4
Serological diagnosis of viral diseases		2	16		16			3	1,4
Molecular diagnosis of viral diseases		2	14		14			2,4	1,4
Total			176	88	88				