



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



Viral Vaccines

(683M)

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:	683M
Course title:	Viral Vaccines
Lecture (hr/week):	2
Practical (hr/week):	3
Course coordinator:	Dr. Abdelhameed Bazid

B. PROFESSIONAL INFORMATION

1) Overall aims of course

Upon successful completion of the course, the student will understand the nature, types and formulations of virus vaccines and their importance in combating viral infections. The student will understand the reasons for vaccination failure. The student will be able to evaluate efficacy and potency of different types of vaccines

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 immunity and types of immune response developed against viral vaccines
- a.2. Explain types of vaccines used against viral infections.
- a.3. Express advanced knowledge about vaccination against viral diseases
- a.4. Clarify causes of vaccination failure

b) INTELLECTUAL SKILLS

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

- b.1. Evaluate the required measurements for prevention and control of viral diseases
- b.2. Judge the quality control of vaccines
- b.3. Evaluate the importance of vaccine components for enhancing host immune response
- b.4. Understand vaccine formulation

c) PROFESSIONAL AND PRACTICAL SKILLS

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

- c.1. Employ suitable method evaluate vaccine potency
- c.2. Practice different methods used for virus isolation in clinical samples
- c.3. Apply molecular techniques used for evaluation of vaccines
- c.4. Apply serological techniques used for evaluation of vaccines

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. Handle appropriate computer / keyboard skills including word
- d.4. Join processing, spreadsheets, presentation packages and graph plotting.

2) Topics and contents

Topic	No. of hours		
	Lect.	Pract.	Total
Introduction era of the development of veterinary vaccines	4	-	1
Types of vaccines	12	-	4
Molecular based vaccines	14	-	2
Vaccination failure	8	4	4
Immune response to viral vaccines	12	30	30

Immune suppression	8	-	5
Adjuvants	8		
Models	4		
Administration of vaccines	4		
Adverse consequences of vaccination	4		
Student presentation of a selected topic	5		
Paper discussion	5		
Laboratory biosafety and introduction to diagnosis of viral diseases		4	
Sampling and sample preparation		6	
Virus isolation on ECEs		10	
Virus isolation on tissue culture		22	
Purification and concentration of viruses		10	
Biological properties of viruses		20	
Serological diagnosis of viral diseases		20	
Molecular diagnosis		20	
Quality control of viral vaccines		20	
Total	88	132	220

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

6.2. Recommended books

-)] **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.

6.3. 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

6.4. 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)
Introduction era of the development of veterinary vaccines	2	-	4	4	-	2		-	1-4
Types of vaccines	2	-	12	12	-	2	2	-	1-4
Molecular based vaccines	2	-	14	14	-	2	2	-	1-4
Vaccination failure	2	-	8	8	-	2,4	1	-	1-4
Immune response to viral vaccines	2	-	12	12	-	1	1	-	1-4
Immune suppression	2	-	8	8	-	1	2	-	1-4
Adjuvants	2	-	8	8	-	2,3	1,3,4	-	1-4
Models	2	-	4	4	-	2,3	1,2	-	1-4
Administration of vaccines	2	-	4	4	-	2	1	-	1-4
Adverse consequences of vaccination	2	-	4	4	-	3	1,4	-	1-4
Student presentation of a selected topic	2	-	5	5	-	1-4	1-4	-	1-4
Paper discussion	2	-	5	5	-	1-4	1-4	-	1-4
Laboratory biosafety and introduction to diagnosis of viral diseases	-	3	-	-	4	-	-	2	1,4
Sampling and sample preparation	-	3	-	-	6	-	-	2	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)
Virus isolation on ECEs	-	3	8	-	10	-	-	2	1,4
Virus isolation on tissue culture	-	3	18	-	22	-	-	2	1,4
Purification and concentration of viruses	-	3	30	-	10	-	-	2	1,4
Biological properties of viruses	-	3	14	-	20	-	-	2	1,4
Serological diagnosis of viral diseases	-	3	14	-	20	-	-	3	1,4
Molecular diagnosis	-	3	4	4	20	-	-	4	1,4
Quality control of viral vaccines	-	3	5	5	20	-	-	1-4	1,4
Total			220	88	132				