

Course Syllabus

1	Course title	Plant Virus Genetics and Replication	
2	Course number	0606964	
3	Credit hours	3	
	Contact hours (theory, practical)	3	
4	Prerequisites/corequisites		
5	Program title	Ph.D. in Plant Protection	
6	Program code		
7	Awarding institution	The University of Jordan	
8	School	School of Agriculture	
9	Department	Department of Plant Protection	
10	Course level		
11	Final qualification	Ph.D. degree	
12	Year of study and semester (s)	2020-2021/ Second Semester	
13	Other department (s) involved in teaching the course		
14	Main teaching language	English	
15	Delivery method	✓Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
16	Online platforms(s)	✓Moodle ✓Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom	
17	Issuing/Revision Date	22/02/2021	

18 Course Coordinator:

Name: Dr. Nida' Salem

Office number: 188

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19 Other instructors:

**20 Course Description:**

As stated in the approved study plan.

At the end of the course, students will be cognizant of salient features of plant virus replication mechanism and how they manipulate their hosts or translation and transcription machinery and exploiting them for their benefits. The course will also extend information about variations and evolution within plant virus population.

21 Course aims and outcomes:



A- Aims:

The course provides information about the intricate mechanism of viral gene expression and replication elucidating the impact of nucleic acid structure. Consensus sequence and other modification on the translation and replication processes. In addition, the course would provide information on the evolution and genetics of plant viruses with some practical implications.

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course student will be able to

A. Knowledge and Understanding: Student is expected to:

- A1- Know the translation and transcription.
- A2- Know the events of plant virus replication.
- A3- Know strategies of plant virus genome translation.
- A4- Recognize the strategies of plant virus genome replication.
- A5- Understand the replication of RNA and DNA plant virus evolution viral genetics.

B. Intellectual Analytical and Cognitive Skills: Student is expected to:

- B1- Understands and analyze literatures pertinent to replication, translation and evolution and genetics of plant viruses.

C. Subject- Specific Skills: Student is expected to:

- C1- Understand the impact of nucleic acid structure consensus sequence and modification on translation replication process.

D. Transferable Key Skills: Student is expected to:

- D1- Able to extrapolate some issues pertinent to the biology and some aspect of epidemiology and control of plant viruses.

Upon successful completion of this course, students will be able to:

PLOs \ SLOs of the course	1	2	3	4	5	6	7	8	9	10	11
A1- Know the translation and the transcription.	√										
A2- Know the events of plant virus replication.	√										
A3- Know strategies of plant virus genome translation.	√										
A4- Recognize the strategies of plant virus genome replication.	√										
A5- Understand the replication of RNA and DNA plant virus evolution viral genetics.	√										
B1- Understands and analyze literature pertinent to replication, translation and evolution and genetics of plant viruses.		√	√								
C1- Understand the impact of nucleic acid structure consensus sequence and modification on translation replication process.				√							
D1- Able to extrapolate some issues pertinent to the biology and some aspect of epidemiology and control of plant viruses.							√	√			

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C- Intended Learning Outcomes (PLOS)

After the successful completion of this program student should be able to:

1. Demonstrate broad depth knowledge of core concepts in plant protection.
2. Exhibit teaching competence through teaching, seminars and speaking experiences.
3. Interpret scientific literature related to Plant pathology, Entomology, or Weed science.
4. Formulate hypotheses, and develop experimental designs to test these hypotheses.
5. Establish and maintain experiments in the field of Plant Pathology, Entomology, or Weed science.
6. Perform appropriate statistical analyses for data collected in in Plant Pathology, Entomology, and Weed science.
7. Think critically, solve research problems, and draw conclusions in the field of Plant Pathology, Entomology, or Weed science
8. Interpret and present research results in both oral and written formats.
9. Publish research in the field of Plant Protection in peer-reviewed scientific journals.
10. Maintain a leadership role in Plant Protection at the national and international levels.
11. Commit to ethics and compliance responsibilities for being an agricultural engineer, especially with regard to agricultural sector, environment, and society.

22. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction, outline discussion		Face to Face		Synchronous		
	1.2	Basics of Eukaryotic translation of Control mechanisms	A1	Face to Face		Synchronous	Exam, quiz	Ref. 1 & 2
2	2.1	Events of plant virus replication	A2	Face to Face		Synchronous	Exam, quiz	Ref. 1 & 2
	2.2	Events of plant virus replication	A2	Face to Face		Synchronous	Exam, quiz	Ref. 1 & 2
3	3.1	Strategies of plant virus genome translation	A3	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	3.2	Strategies of plant virus genome translation	A3	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
4	4.1	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	4.2	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
5	5.1	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	5.2	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
6	6.1	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	6.2	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
7	7.1	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	7.2	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
8	8.1	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	8.2	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
9	9.1	Virus replication of RNA viral groups	A4	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	9.2	Midterm exam						
10	10.1	Basics of transcription and DNA replication	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2

	10.2	Basics of transcription and DNA replication	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
11	11.1	Virus replication of DNA viral groups	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	11.2	Virus replication of DNA viral groups	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
12	12.1	Virus replication of DNA viral groups	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	12.2	Virus replication of DNA viral groups	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
13	13.1	Evolution and viral genetics	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	13.2	Evolution and viral genetics	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
14	14.1	Evolution and viral genetics	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
	14.2	Evolution and viral genetics	A5, B1, C1, D1	Face to Face		Synchronous	Exam, quiz, assignment	Ref. 1 & 2
15	15.1	Students presentation	A5, B1, C1, D1	Face to Face		Synchronous	Exam, presentation	Ref. 1 & 2
	15.2	Students presentation	A5, B1, C1, D1	Face to Face		Synchronous	Exam, presentation	Ref. 1 & 2

23 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Midterm exam	30	Wk1- Wk8	A1-A4	9th week	
Activities:	20		A1-A5, B1 C1, D1	At the end of each topic	
1. Quizzes	5				
2. Presentation	5				
3. Assignments	10				
Final Exam	50	W1- W15 all topics	A1-A5, B1 C1, D1	Will be announced from registrar	



24 Course Requirements

(e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform...etc.):

Students should have a computer, internet connection, and account on Microsoft teams to have access to course materials and for some course activities.

25 Course Policies:

Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming, then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter, problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For final complaints, there will be a committee to review grading the final exam. For more details about the below issues (**A-F**), please read the University regulations and visit: <http://units.ju.edu.jo/ar/LegalAffairs/Regulations.aspx>

A- Attendance policies.

B- Absences from exams and submitting assignments on time.

C- Health and safety procedures.

D- Honesty policy regarding cheating, plagiarism, misbehavior.

E- Grading policy.

From (%)	To (%)	Scale	Mark	Result
0	59	0	C	Fail
60	63	2.5	C+	Good
64	67	2.75	B-	Very Good
68	75	3	B	Very Good
76	79	3.5	B+	Very Good
80	83	3.75	A ⁻	Excellent
84	100	4	A	Excellent

F- Available university services that support achievement in the course:



26 References:

Reference:

1. Hull, R. (2014) Plant Virology. 5th Edition, Academic Press, London, 854 p.
2. Selected papers will be discussed.

27 Additional information:

Certain lectures may be converted into practical (virtual).

Name of Course Coordinator: -----	Signature: -----	Date: -----
Head of Curriculum Committee/Department: -----	Signature: -----	
Head of Department: -----	Signature: -----	
Head of Curriculum Committee/Faculty: -----	Signature: -----	
Dean: -----	Signature: -----	