



## Course Syllabus

1	Course title	Plant Viral Diseases	
2	Course number	0606326	
3	Credit hours	3	
	Contact hours (theory, practical)	Theory: 2, Practical: 3	
4	Prerequisites/corequisites	Plant Pathology (0636221)	
5	Program title	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	Third year	
11	Year of study and semester (s)	2024-2025/First Semester	
12	Other department (s) involved in teaching the course		
13	Main teaching language	English	
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	Online platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date	06/10/2024	

### 17 Course Coordinator:

Name: Dr. Nida' Salem

Contact hours: 11:30 – 12:30 pm Monday

11:30 – 12:30 pm Wednesday

Office number: 188

Phone number: 22358

Email: [n.salem@ju.edu.jo](mailto:n.salem@ju.edu.jo); [nmsalem72@gmail.com](mailto:nmsalem72@gmail.com)

**18 Other instructors:**

Name: Eng. Dina Al-Hattab/Lab supervisor/Practical part

Office number: 145

Phone number: 22513 (Department phone)

Email: dinashattab@yahoo.com

Contact hours: 11:00 – 12:00 pm Monday

**19 Course Description:**

As stated in the approved study plan.

This course provides basic information about viral-caused diseases of cultivated crops that may aid in their diagnosis and possible control and summarize the current knowledge about each virus-induced disease in many economically important cultivated crops.

**20 Course aims and outcomes:**

#### A- Aims:

At the end of the course, students will become familiar with the most important plant viral diseases in Jordan and other parts of the world, including viral disease of cucurbits, solanaceous, crucifer, compositae, legumes, cereals as well as fruit trees, grapevine, pome fruit, stone fruit and citrus.

#### B- Students Learning Outcomes (SLOs):

Upon successful completion of this course student will be able to

##### **A. Knowledge and Understanding:** Student is expected to:

- A1- Know what are viruses, their composition, structure and classification.
- A2- Know what symptoms and signs do viruses cause.
- A3- Recognize how do viruses survive and spread.
- A4- Understand the control measures that used to manage plant viral diseases.

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

- B1- Diagnose virus diseases and distinguish them from other plant diseases.
- B2- Be able to manage virus diseases.

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

- C1- Apply the basic knowledge of Plant Virology for identification of virus diseases in the field.
- C2- Integrate different approaches for virus disease management in the field.

##### **D. Transferable Key Skills:** Student is expected to:

- D1- Distinguish virus symptoms in the plants and their associated diseases.
- D2- Know the different techniques including state-of-art methods that used for virus detection and identification in the field as well as in the laboratory.

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

1. Demonstrate a depth in understanding of the fundamental knowledge and skills required in the field of Plant Protection sciences, which include weeds, insects, mites, fungi, bacteria, viruses and nematodes.
2. Identify and distinguish harmful and beneficial weeds, insects, mites, fungi, bacteria, and nematodes.
3. Predict the outbreaks of pests and determine the level of infection based on skills gained in the field of Plant Protection Sciences.
4. Recognize different techniques (biological, chemical, cultural, and physical) in pest control.

5. Design and develop appropriate management strategies of pests in an environmentally friendly manner.
6. Participate efficiently in agricultural projects in the field of pest management in various public and private sectors in Jordan and worldwide.
7. Communicate effectively in written, oral, and graphical forms.
8. Employ the gained skills in communication and serving different communities.
9. Commit to ethics and compliance responsibilities for being an agricultural engineer, especially with regard to agricultural sector, environment and society.

PLOs SLOs of the course	1	2	3	4	5	6	7	8	9
<b>A. Knowledge and Understanding</b>									
A1- Know what are viruses, their composition, structure and classification.	X								
A2- Know what symptoms and signs do viruses cause.	X								
A3- Recognize how do viruses survive and spread.	X	X							
A4- Understand the control measures that used to manage plant viral diseases.	X	X	X						
<b>B. Intellectual Analytical and Cognitive Skills</b>									
B1- Diagnose virus diseases and distinguish them from other plant diseases.		X	X						
B2- Be able to manage virus diseases.				X	X	X	X		
<b>C. Subject- Specific Skills</b>									
C1- Apply the basic knowledge of Plant Virology for identification of virus diseases in the field.		X	X	X	X	X	X	X	X
C2- Integrate different approaches for virus disease management in the field.		X	X	X	X	X	X	X	X
<b>D. Transferable Key Skills</b>									
D1- Distinguish virus symptoms in the plants		X	X	X	X	X	X	X	X

and their associated diseases.									
D2- Know the different techniques including state-of-art methods that used for virus detection and identification in the field as well as in the laboratory.		X	X			X	X	X	X

## 21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	Introduction to the course		Face to Face	Microsoft Teams	Synchronous Lecturing		
	1.2	Economic importance of plant viruses	A1-4	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz	1,5,10,11
2	2.1	Plant virus symptoms	A1-4 B1-4 C1-4	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab reports	1,5,10,11
	2.2	Plant virus symptoms	A1-4 B1-4 C1-4	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab reports	1,5,10,11
3	3.1	Plant virus architecture	A1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz	1,5,10
	3.2	Plant virus composition and structure	A1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz	1,5,10
4	4.1	Plant virus composition and structure	A1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz	1,5,10
	4.2	Classification and taxonomy	A1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz	1,9

5	5.1	Virus replication	A1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz	1,8
	5.2	Virus transmission	A1-4 B1-2 C1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report	1,8
6	6.1	Virus transmission	A1-4 B1-2 C1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report	1,8
	6.2	Virus diseases of cucurbitaceous vegetable plants	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
7	7.1	Virus diseases of cucurbitaceous vegetable plants	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
	7.2	Virus diseases of cucurbitaceous vegetable plants	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
8	8.1	Virus diseases of solanaceous vegetable plants: tomato	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
	8.2	Virus diseases of solanaceous vegetable plants: tomato	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
9	9.1	<b>Midterm Exam: Monday December 02, 2024</b>						
	9.2	Virus diseases of solanaceous	A1-4 B1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12

		vegetable plants: potato	C1-2 D1-2					
10	10.1	Virus diseases of solanaceous vegetable plants: potato	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
	10.2	Virus diseases of solanaceous vegetable plants: pepper	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, lab report, presentation	2,3,4,12
11	11.1	Virus diseases of legume vegetables	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, presentation	2,3,4,12
	11.2	Virus diseases of compositae and crucifer's vegetables	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, presentation	2,3,4,12
12	12.1	Virus diseases of cereals, Grapevine	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, presentation	2,4,7
	12.2	<b>Holiday: Wednesday December 25, 2024</b>						
13	13.1	Virus diseases of Grapevine	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, presentation	2,4,7
	13.2	<b>Holiday: Wednesday January 01, 2025</b>						
14	14.1	Virus diseases of stone and pome fruits	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, presentation	2,4,7

	14.2	Virus diseases of citrus	A1-4 B1-2 C1-2 D1-2	Face to Face	Microsoft Teams	Synchronous Lecturing	Exam, quiz, presentation	2,4,7
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## 22 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
Class Midterm Exam	20	From wk1 - wk8 (mentioned above)	A1-4 B1-2 C1-2 D1-2	December 02, 2024	At the University
Lab. Midterm Exam	10	From wk1 - wk7	A1-4 B1-2 C1-2 D1-2	November 27, 2024	At the University
Quizzes - Presentations	10	All topics	A1-4 B1-2 C1-2 D1-2	Weekly	At the University
Lab. reports	10	All topics	A1-4 B1-2 C1-2 D1-2	Will be announced for each lab. experiment	At the University
Lab. Final Exam	15	All topics	A1-4 B1-2 C1-2 D1-2	January 15, 2025	At the University



Class Final Exam	35	All topics	A1-4 B1-2 C1-2 D1-2	Will be announced from register	At the University
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## 23 Course Requirements

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

Students should be familiar with the Microsoft Teams, Zoom and Moodle.

## 24 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, 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

F- Available university services that support achievement in the course

## 25 References:

A-Required book(s)

1. Astier, S., Albouy, J., Maury, Y., Robaglia, C., Lecoq, H. 2007. Principles of Plant Virology, Genome, Pathogenicity, Virus Ecology. Science Publishers, Enfield, NH, USA. 472 pp.

2. Susic, D. D., Ford, R. E., Tosic, M. M. 1999. Handbook of Plant Virus Diseases. CRC Press, New York. 553 pp.
3. Loebenstein, G., Lecoq, H. 2012. Advances in Virus Research: Viruses and Virus Diseases of Vegetables in the Mediterranean Basin. Academic Press. 570 pp.

B- Recommended books, materials, and media:

4. Plant Viruses Online (<http://www.dpvweb.net>)
5. Walkey, D. 1991. Applied Plant Virology. Chapman and Hall, New York. 338 pp.
6. Dijkstra, J., De Jager, C. P. 1998. Practical Plant Virology. Protocols and Exercises. Springer-Verlag, Berlin. 459 pp.
7. Hadidi, A., Khetarpal, R. K., Koganezawa, H. 1998. Plant Virus Disease Control. APS Press, St. Paul. 684 pp.
8. Matthews, R. E. F. 1992. Fundamentals of Plant Virology. Academic Press, New York. 403 pp.
9. Bos, L. 1999. Plant Viruses, unique and intriguing pathogens. Backhuys Publishers, Leiden, Netherlands. 358 pp.
10. Bos, L. 1983. Introduction of Plant Virology. Longman, London and New York. 329 pp.

11. علام، عصمت، سلامة، أحمد السيد، عمر، رشدي عبد الباقي. 2000. فيروسات النبات. المكتبة الأكاديمية 472 ص.

12. مكوك، خالد محيي الدين، جابر إبراهيم فجلة و صفاء غسان قمريز. 2008. الأمراض الفيروسية للمحاصيل الزراعية المهمة في المنطقة العربية. الجمعية العربية لوقاية النبات. دار النهضة العربية.

Relevant articles on the internet



## 26 Additional information:

### Intended grading scale (example)

Mark	To	From
A	100	86
A-	85	83
B+	82	80
B	79	74
B-	73	71
C+	70	68
C	67	62
C-	61	59
D+	58	56
D	55	50
D-	49	47
H	46	0

Laboratory schedule is attached.

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