Form: Course Syllabus		
	Form Number	EXC-01-02-02A
	Issue Number and Date	2963/2022/24/3/2 5/12/2022
	Number and Date of Revision or Modification	2/(10/12/2023)
	Deans Council Approval Decision Number	50/2023
	The Date of the Deans Council Approval Decision	26/12/2023
	Number of Pages	06

1.	**Course Title**	Economic Acarology
2.	**Course Number**	0606756
3.	**Credit Hours (Theory, Practical)**	3
	Contact Hours (Theory, Practical)	3
4.	**Prerequisites/ Corequisites**	
5.	**Program Title**	Master in Plant Protection
6.	**Program Code**	
7.	**School/ Center**	The University of Jordan
8.	**Department**	Agriculture
9.	**Course Level**	Plant Protection
10.	**Year of Study and Semester (s)**	Master
11.	**Other Department(s) Involved in Teaching the Course**	/
12.	**Main Learning Language**	English
13.	**Learning Types**	☒ Face to face learning ☐Blended ☐Fully online
14.	**Online Platforms(s)**	☐Moodle ☐Microsoft Teams
15.	**Issuing Date**	
16.	**Revision Date**	

17. Course Coordinator:

Name: Prof. Salah Araj	Contact hours:
Office number:	Phone number: +962 6 5355000 Ext. 22520
Email: s.alaraj@ju.edu.jo	

18. Other Instructors:

Name:
Office number:
Phone number:
Email:
Contact hours:
Name:
Office number:
Phone number:
Email:
Contact hours:

19. Course Description:

This course includes the study of mites in relation to economic crops, animals and man. Students study the mite population, methods of estimation and evaluation of mite population on the life history, damage and losses to major economic crops. Practical period might be give

20. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

1. Implement the advanced concepts and processes in various disciplines in Plant Protection.
2. Extract information and findings of science from literature in Plant Protection.
3. Plan, conduct and analyze the results of scientific research.
4. Communicate effectively with his supervisors and colleagues orally and in writing.
5. Employ expertise and skills gained in the development production, research, and extension on different levels in the public and private sectors in Jordan and worldwide.
6. Engage efficiently in a scientific team work.
7. Publish research in the field of Plant Protection in peer-reviewed scientific journals.
8. Commit to ethics and compliance responsibilities for being an agricultural engineer, especially with regard to agricultural sector, environment and society.

21. Course Intended Learning Outcomes: (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

A. Knowledge and Understanding: Student is expected to
A1- Interpret scientific literature related to economic acarology.
A2- Cope with management of mite infestation.
A3- Identify mite's species of economic importance that infest agricultural crops

B. Intellectual Analytical and Cognitive Skills: Student is expected to
B1- Learning how to identify mite species through the symptoms they inflect.
B2- To differentiate between the different mite species from their symptoms

C. Subject- Specific Skills: Students is expected to
C1- Bioassay evaluation of Acaricides against mites of economic importance

D. Transferable Key Skills: Students is expected to
D1- Collection, preparation and identification of mounted mite's slides.
D2-Know the right strategy to control mites of the economic value.

Course ILOs	The learning levels to be achieved					
	Remembering	Understanding	Applying	Analysing	evaluating	Creating

22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:

~~Program ILOs~~ / ~~Course ILOs~~	ILO (1)	ILO (2)	ILO (3)	ILO (4)	ILO (5)
1					
2					
3					
4					
5					
6					
7					
8					

23. Topic Outline and Schedule:

Week	Lecture	Topic	ILO/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	1.1	Acarology and Economic importance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	1.2	Acarology and Economic importance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	1.3	Acarology and Economic importance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
2	2.1	Acarology and Economic importance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	2.2	Acarology and Economic importance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	2.3	Acarology and Economic importance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
3	3.1	General Features:	A3, B1,	Face to		Asynchronous	Homework,	1.2.3.4.5.6.7.8

		Distribution and Abundance	D1	face			Quiz, Presentations	
	3.2	General Features: Distribution and Abundance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	3.3	General Features: Distribution and Abundance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
4	4.1	General Features: Distribution and Abundance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	4.2	General Features: Distribution and Abundance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	4.3	General Features: Distribution and Abundance	A3, B1, D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
5	5.1	Ontogeny	A2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	5.2	Ecology: Free-Living Mites	A2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	5.3	Ecology: Free-Living Mites	A2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
6	6.1	Collection, Preparation, Mounting, and Preserving Mites	D1	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	6.2	Classification of Suborders of Mites	A3, B2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	6.3	Classification of Suborders of Mites	A3, B2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
7	7.1	Mites of Vegetables and Ornamentals	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	7.2	Mites of Greenhouses	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	7.3	Mites of Greenhouses	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
8	8.1	Common Sense Pest Control Methods in Greenhouses	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	8.2	Spider Mites	A3, A2, B2, D1,	Face to face		Asynchronous	Homework, Quiz,	1.2.3.4.5.6.7.8

			D2				Presentations	
	8.3	Twospotted Spider Mite, *Tetranychus urticae* (Koch)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
9	9.1	Carmine Spider Mite, *Tetranychus cinnabarinus* (Boisduval)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	9.2	Clover Mite, *Bryobia praetiosa* (Koch)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	9.3	Tetranychid Symptoms	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
10	10.1	Management of Two Spotted Spider Mite	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	10.2	Tarsonemid Mites	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	10.3	Broad Mite, *Polyphagotarsonemus latus (Banks)*	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
11	11.1	Management of Broad Mite	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	11.2	Mites of Vegetables in the Open Field	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	11.3	Eriophyid Mites	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
12	12.1	Tomato Russet Mite, *Aculops lycopersici* (Massee) Management of Tomato Russet Mite	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	12.2	Mites of Fruit Trees	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	12.3	False (Flat) Spider Mites	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
13	13.1	Citrus Mites Oriental spider mite, *Eutetranychus orientalis* (Klein) Citrus Red Mite, *Panonychus citri* (Mc Gregor)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8

	13.2	Citrus Rust Mite, *Phyllocoptruta oleivora* Citrus bud mite, *Eriophyes sheldoni* Dispersal of Citrus Mites Management of Citrus Mites	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	13.3	Olive Mites	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
14	14.1	Olive bud mite, *Oxycenus maxwelli* (Keifer)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	14.2	Management of Olive bud mite	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	14.3	Mites of Pome and Stone Fruit Trees	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
15	15.1	European red mite (ERM), *Panonychus ulmi* (Koch)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	15.2	Brown mite, *Bryobia rubrioculus* (Scheuten)	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8
	15.3	Management of Pome and Stone Fruit Trees	A3, A2, B2, D1, D2	Face to face		Asynchronous	Homework, Quiz, Presentations	1.2.3.4.5.6.7.8

24. Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	ILO/s Linked to the Evaluation activity	Period (Week)	Platform
Midterm Exam	30	According to lecturing schedule	All	To be agreed upon	Face to face
Project	10	Collection, Preparation, Mounting, Identification and Preserving Mites	All	To be agreed upon	

Assignments	5	General Features of Mites Mites of Vegetables and Ornamentals	All	To be agreed upon	
Homework	5	According to lecturing schedule	All	To be agreed upon	
Final Exam	50	According to lecturing schedule	All	To be agreed upon	

25. Course Requirements:

26. Course Policies:

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:

27. References:

A- Required book(s), assigned reading and audio-visuals:

1-Vacante, V. 2016. Handbook of Mites of Economic Plants: Identification, Bio-ecology and Control, Xfordshire, UK.
2- Sharaf, N. 2009. Lectures in: Mites of Economic Important Crops in Jordan.

B- Recommended books, materials, and media:

3. Baker, E. W., and G. W. Wharton. 1952. An Introduction to Acarology. MacMillan Co. New York.
4. Baker, E. W., J. H. Camin, F. Cunliffe, T.A. Woolley, and C.E. Yunker. 1958. Guide to the Families of Mites. Institute of Acarology Contr. No. 3: 242 pp.
5. Krantz, G.W. 1970. A Manual of Acarology. O.S.U. Book Stores, Inc., Corvailis, Oregon.
6. Walter, D. E., and H. C. Proctor. 1999. Mites: Ecology, Evolution and Behaviour. University of NSW Press, Sydney and CABI, Wallingford.

7. Woolley,T.A. 1988. Acarology: Mites and Human Welfare. John Wiley & Sons, NewYork.
8. Zhang, Z. 2003. Mites of Greenhouses, Identification, Biology and Control. CABI Publishing, CAB International, Wallingford, Oxon, UK.

28. Additional information:

Name of the Instructor or the Course Coordinator: ……	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ Department ……	Signature: ……..……	Date: ……..……
Name of the Head of Department ……	Signature: ……..……	Date: ……..……
Name of the Head of Quality Assurance Committee/ School or Center ……	Signature: ……..……	Date: ……..……
Name of the Dean or the Director ……	Signature: ……..……	Date: ……..……