



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

1.	Course Title	Chemistry of Pesticides
2.	Course Number	0606712
3.	Credit Hours (Theory, Practical)	3
	Contact Hours (Theory, Practical)	3
4.	Prerequisites/Corequisites	Pesticides (606351)
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	<input type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input checked="" type="checkbox"/> Fully online
14.	Online Platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> 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:

As stated in the approved study plan.

The main objectives of the course are to;

Provide students with several aspects of conventional pesticides chemistry, biological activity and degradation, to introduce the use of biopesticides, microbial, biochemical pesticides and plant pesticides and to environmental impact of conventional and biopesticides.

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)

1. Be able to understand the chemistry and biological activity of main conventional and biopesticides.
2. Be able to understand the various toxic and non-toxic groups of pesticides.
3. Understand the chemistry and behavior of pesticides.
4. Recommend the suitable pesticides to control pests.
5. Work effectively on pesticides problems in agricultural sectors.
Work effectively with public health pesticides.

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	x				
2		x			
3		x			
4					x
5		x			
6			x		
7					
8				x	

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	General and toxicological considerations		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	1,4,5,10



	1.2	General and toxicological considerations		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	1,4,5,10
	1.3	General and toxicological considerations		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	1,4,5,10
2	2.1	Chemistry of conventional insecticides: Chlorinated hydrocarbons		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	1,5,9,10
	2.2	Chemistry of conventional insecticides: Chlorinated hydrocarbons		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	1,5,9,10
	2.3	Chemistry of conventional insecticides: Chlorinated hydrocarbons		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	1,5,9,10
3	3.1	Organophosphorus		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	3.2	Organophosphorus		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	3.3	Organophosphorus		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
4	4.1	Carbamates		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	4.2	Carbamates		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	4.3	Carbamates		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
5	5.1	Pyrethroides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	7,10
	5.2	Pyrethroides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	7,10
	5.3	Pyrethroides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	7,10



6	6.1	Botanicals		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	6.2	Botanicals		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	6.3	Botanicals		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
7	7.1	Neonicotinoides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	6,10
	7.2	Neonicotinoides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	6,10
	7.3	Neonicotinoides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	6,10
8	8.1	Chemistry of Acaricides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	8.2	Chemistry of Acaricides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	8.3	Chemistry of Acaricides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
9	9.1	Chemistry of non-systemic fungicides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	9.2	Chemistry of non-systemic fungicides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
	9.3	Chemistry of non-systemic fungicides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	5,10
10	10.1	Chemistry of systemic fungicides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	8,10
	10.2	Chemistry of systemic fungicides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	8,10
	10.3	Chemistry of systemic fungicides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	8,10
11	11.1	Biopesticides: Microbial insecticides		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,3, 5,10



		(bacterial, fungal, etc.						
	11.2	Biopesticides: Microbial insecticides (bacterial, fungal, etc.		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,3, 5,10
	11.3	Biopesticides: Microbial insecticides (bacterial, fungal, etc.		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,3, 5,10
12	12.1	Biochemical insecticides (pheromones, etc.		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,5,10
	12.2	Biochemical insecticides (pheromones, etc.		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,5,10
	12.3	Biochemical insecticides (pheromones, etc.		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,5,10
13	13.1	Plant pesticides including transgenic plants		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,5,10
	13.2	Plant pesticides including transgenic plants		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,5,10
	13.3	Plant pesticides including transgenic plants		Fully Online	MS Teams	Synchronous	Homework, Quiz, Presentations	2,5,10

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
First midterm exam	25	According to lecturing schedule	1 to 5	To be agreed upon	Face to Face



Second midterm exam	25	According to lecturing schedule	1 to 5	To be agreed upon	Face to Face
Term paper and activities	10	According to lecturing schedule	1 to 5	To be agreed upon	MS Teams
Final Exam	40	According to lecturing schedule	1 to 5	To be agreed upon	Face to Face

25. Course Requirements:

Students should have a computer, internet connection, webcam, account on a specific software/platform MS Teams)

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:

Brooks, G. T. and Roberts, T. R. (1999). Pesticide Chemistry and Bioscience. Royal Society of Chemistry, U.K., 438 pp.

B- Recommended books, materials, and media:

2. Buchel, K.H. (1983). Chemistry of Pesticides. John Wiley and Sons, New York, 581 pp.

3. Cremlyn, R. (1990). Agrochemicals: Preparation and Mode of Action. John Wiley and Sons, Chichester, 240 pp.

4. Crombie, L. (1990). Recent Advances in the Chemistry of Insect Control. II Royal Society of Chemistry, Cambridge, 296 pp.

5. Hassall, K. A. (1990). The Biochemistry and Use of Pesticides (2nd ed.). Press Ltd, London, 271 pp.



6. Jeschke, P., Moriya, K., Lantzs, R., Seifer, H., Linder, W., Jelich, K., Gohrt, A., Beck, M. E. and Etzel, W. (2003). The Third Member of the Chloronictinyl Insecticide Family. Pflanzenschutz-Nachrichten Bayer, 56 (1): 5-25.
7. Leahey, J. P. (1985). The Pyrethroid Insecticides. Taylor and Francis, London, 440 pp.
8. March, R. W. (1972). Systemic Fungicides. Longman, London, 321 pp.
9. Voss, G. and Ramos, G. (2003). Chemistry of Crop Protection. Wiley-VCH Verlag GmbH and Co. Grunstadt, Germany, 395 pp.
10. Web sites and Journals.

28. Additional information:

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