Module (Course Syllabus) Catalogue

2022-2023

College/ Institute	**Khabat Technical Institute**	
Department	**Plant Protection**	
Module Name	**Non insect animal pests**	
Module Code	NAP304	
Degree	**Technical Diploma** [x] **Bachler** [ ] **High Diploma** [ ] **Master** [ ] **PhD** [ ]	
Semester	**Third**	
Qualification	**MSc. Plant Protection**	
Scientific Title	**Lecturer**	
ECTS (Credits)	**6**	
Module type	**Prerequisite** [ ] **Core** [x] **Assist.** [ ]	
Weekly hours	**4**	
Weekly hours (Theory)	**(1)hr Class**	**(2)Total hrs Workload**
Weekly hours (Practical)	**(3)hr Class**	**(4.5)Total hrs Workload**
Number of Weeks		
Lecturer (Theory)	**Ayoub Ibrahim Ahmed**	
E-Mail & Mobile NO.	**ayoub.ahmed@epu.edu.iq /07504529388**	
Lecturer (Practical)	**Nihad malik Ahmed**	
E-Mail & Mobile NO.	**nihad.cmi@gmail.com /07504553378**	
Websites		

Course Book

Course Description	Plants sources of life, any damages and shortage of plant product directly and indirectly caused deficiency of human foods and effect on economic and public health of peoples, for this reason controlling plant pests important to safe economic of countries . Students have to know the damage of agricultural pests and how to control it during the semester period.
Course objectives	**1- Preparation of specialists in the field of plant protection** **2- Develop appropriate methods to control plant damages caused by non-insect agriculture pests.** **3- Selecting the best way for controlling plant pests.**
Student's obligation	**Students must be attend theoretical and practical lectures and visit the fields to watch pests and know the symptoms of infestation ,also to choose the best way to control it, in addition to implement daily quizzes and writing reports.**
Required Learning Materials	The lectures are explained and record then sent to student through online according to the University instructions, practical lectures describes through short videos and pictures. If students attend to the campus practical lectures done in Laboratories and fields of institute and farmers.

Evaluation

Task		Weight (Marks)	Due Week	Relevant Learning Outcome
Paper Review				
Assignments	Homework	5	4	5%
	Class Activity	2	2	2%
	Report	5	4	5%
	Seminar	5	4	5%
	Essay			
	Project			
Quiz		8	6	8%
Lab.		10	4	10%

	Midterm Exam	25	6	25%
	Final Exam	40	12	40%
	Total	100	12	100%

Specific learning outcome:

1- group work, role play, case-based learning

2-Laboratory practice: Lecture, group discussion, workshop, skill demonstration, group work, role play, team teaching, case-based learning, self-training

3-Field practice: skill demonstration, case-based learning, group work, group discussion, clinical facilitation and debriefing, collecting samples, seminar, workshop.

4- **General:** library, computer suite with internet access

5- Laboratory with equipment for training, white board, computer with equipment for PowerPoint presentations, overhead projector, posters

12Course References:

1- Whitehead A.G.(1997), Plant Nematode Control, Cambridge University Press UK ,384pp.

1- ابراهيم ، ابراهيم خيرى عتريس (2004) . النيماتودا المتطفلة على المحاصيل الحقلية و البستانية . منشأة المعارف بالاسكندرية ، 330 صفحة .

2- الحازمي ، أحمد بن سعد (1992) . مقدمه فى نيماتولوجيا النباتات . مطابع جامعة الملك سعود ، الرياض – المملكة العربية السعودية ، 326 صفحة .

3- **عويس ، محمد عطيه وعادل حسن امين (1984) . الافات الحيوانية غير الحشرية ، جامعة الموصل . مديرية مطبعة الجامعة .**

4- **حبيب ، خالد عبدالرزاق و ابراهيم جدوع الجبوري و خولة طه النعيمي (1984) . الافات الحيوانية غير الحشرية وطرق مقاومتها ، مديرية دار الكتب للطباعة والنشر . جامعة الموصل .**

- **سەرچاوە سودبەخشەکان :**

1- Mai, W. F. ; Mullin, P. G. ; Lyon, H. H. and K. Loeffler (1996). Plant-Parasitic nematodes , A pictorial Key to genera , Fifth edition . Cornell Unversity press , Ithaca and London . 277 pp.

2- ابراهيم ، ابراهيم خيرى عتريس (2002) . نيماتودا المحاصيل الزراعية ، الامراض والمقاومة . منشاة المعارف بالاسكندرية ، 344 صفحة .

3- **الافات والامراض النباتية منظمة (FAW) جزء الاول والثاني سنة** 2003

گۆڤارو ريڤيوو (ئينتەرنێت) :

1- http:// faculty.ksu.edu.sa

2- http://portal.agricultureegypt.com

3- http://www.frsaan.com

Course topics (Theory)	Week	Learning Outcome
Definition of non-insect plant pests – Division of non – insect plant pests- factors caused increase of non- insect plant pests.	**First**	Identification of non-insect animal plant pests and to know the factors caused increase of non-insect pests
Introduction to Nematology, General Characters, Damages caused to plants, plants are affected, distribution in Kurdistan.	**Second and Third**	Identification of Nematodes ,Characters sensitive plants and distribution range in Kurdistan Region
Study of the most important nematodes and diseases that they cause in Iraq, including: root rote nematode on vegetables and citrus tree nematodes**.**	**Four**	To competition between different symptoms of nematodes
Wheat seed gall nematode and potato nematodes.	**Five**	To identify the wheat gall nematode and potato nematodes and there life cycle.
Damages and most important Eriophyoidae mites	**Six**	

Economic important of Acarina (mites and spiders) on plants , False spider mites	**Seven**	
The factors that lead to the success of mites to survive, The most important diseases transmitted by ticks to humans and animals	**Eight**	
Rodents , Rodent Life Cycle and Damages	**Nine**	
Most important rodents	**Ten**	
Birds, Most Important of birds caused plant Damage	**Eleven**	
Mollusca (Slugs and Snails**)**	**Twelve**	

Practical Topics	**Week**	**Learning Outcome**
Methods for nematode sampling (from soil, green spaces and trees).	**First**	How to collect soil sample
: Methods for extracting nematodes from soil	**Second and Third**	Extracting nematodes from soil
Methods of extracting nematodes from plants	**Four**	Extracting nematodes from infected plant parts
:Methods for extracting root-knot nematode eggs and root staining methods	**Five**	Recognize root knot nematodes
Methods for controlling root-knot nematodes, citrus nematodes and wheat nematodes	**Six**	Information about controlling root knot nematodes
Types of mites that affected animals, methods of resistance and prevention	**Seven**	Recognize mites that infested plants
Types of mites affecting plants, their economic importance,	**Eight**	Some example of mite species which infested

		plants
Methods for Controlling mites.	**Nine**	Recognize methods for controlling mites
Methods of preventing and controlling rodents	**Ten**	Recognize methods for controlling rodents
Harmful birds and ways to controlling them	**Eleven**	Recognize methods for controlling birds
Land snails and ways to controlling it	**Twelve**	Recognize methods for controlling snails and slugs

Questions Example Design

Questions Example Design

Q1/ Write the scientific names of the following causes

1- Root-knot nematodes
2- Citrus nematode
3- Wheat seed nematode

Answer :1- *Meloidogyne incognita*

Meloidogyne javanica

2- *Tylenchulus semipenitrans*

3- *Anguina tritici*

Q2/ Explain six general requirements for nematode sampling from soil samples

1- Auger sample collection cylinder is usually used, and if this is not possible, use a shovel or any other suitable tool for sampling.
2- The sample is taken when the field humidity is suitable (slightly less than 60% of the field capacity) while avoiding the waterlogged or very dry areas.
3- Hard areas or areas infested with weeds, as well as field edges and ponds, should be avoided.
4- If the soil of the field is not homogeneous, for example if it is clayey in one part of the field and sandy in the other part, separate samples are taken from each type of soil according to the size of each part.
5- If the field is the same, then it is divided into sections, each section with a specific area and a sample is taken from each section.
6- The sample should contain a portion of the roots whenever possible
7- When taking samples, each compound sample is mixed and placed in a plastic bag enclosed with all necessary information.

Q3/ Divide mites according to their habits and places of residence

First: - Free living mites, which are divided into
a- predatory species, b- plant species, c- fungal infestations, d- feeding mites e- transitional mite
Secondly: Parasitic mites on animals, and it is divided into two parts based on the method of parasitism

A- external mites Parasitism on vertebrates and invertebrates
B- Internal infarcts Parasitism on vertebrates and invertebrates

Q4/ Write General characteristics of rodents 1- Their bodies are covered with hair, 2- has mobile eyelids and has external ears. 3- Their body temperature is constant. 4- breathe with the lungs. 5- It has two pairs of limbs adapted to different types of movement such as walking, running, climbing, digging and swimming.

Q5/ Write the other name of The family Eriophyidae :

- Galls mites - Rust mites - Blister mites - Erioiphyid mites - Four legged mites

Q6/ What are the most important damages of birds to plants
a- It feeds on most agricultural crops, fruits and vegetables, and causes a decrease in the expected yield
b- They attack old and modern stores, and feed on grains
c- Birds also attack fish farms and bees
d- transferred some pathogens and w

Extra notes:

External Evaluator

Department Courses Catalogue (2019-2020)	
Degree	Diploma
College/Institute	Khabat Technical Institute
Address	Khabat - Erbil
Start dates	2008
Program Duration	Four Years ☐ Two Years ●
Program Load	Full-Time
Dept. Code	1697
Contact Person:	Bilal Ibrahim Muhammed
Phone	07508540939
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Mission	The prevention department missions its graduation to the field in order to work directly on plants diseases, non-insect animals pest, insect problems, laboratory and eliminate them.
Vision:	The department vision is that its graduate will benefit from the science that studied in the department and apply in the field and laboratory in order to increase his/her experience in the future.
Objectives:	To get general information about field crops, and horticulture, and how to control plant pests (pathology + insect) by using different types of control such as biological, physical cultural and chemical control (IPM), and they are able to unite theoretical knowledge and practical skills in solving problems of plant protection and beneficial insects and bee keeping.

Courses		
Semester	Modules	Code
First	1- Kurdology 2-English Language 3- Computer Skills 4- General Botany 5- Plant Production	KUR101 ENL102 COM103 GEB104 PLP105
Second	1- English Language 2- Tractors and Control Equipment 3- Principles of pests control 4- Principles of plant protection 5- Bee keeping	ENL201 TCE202 PPC203 PPP204 BEK205
Third	1- Field crops insect 2- Field crops diseases 3- Biological control 4- Non-insect animal pests 5- Graduation project	FCI301 FCD302 BIC303 NAP304 GRP305
Fourth	1- Orchard insects 2- Orchard diseases 3- Weed control 4- Insect taxonomy 5- Graduation project 6- Summer training	ORI401 ORD402 WEC403 INT404 GRP405 SUT406

About the Department (History):

The plant protection department was opened in 2008, with an annual graduation between 25-40 students. The department consists of 8 lecturer, 5 BSc. and 10 diplomas. The first batch was graduated in 2010 and still ongoing

General Learning Outcomes:

1- The plant protection department, two years study during this study they will get basic information about plant protection.
2- They will get general information about field crops, and horticulture and how to propagate them.
3- They will get general information about insect such as how to collect insects, how to preserve, how to classify them.
4- Also they will study economic insect, and how to control them.
5- They will study plant pathology, how to diagnose disease and disease type such as (fungi, nematode bacteria, etc.) and how to isolate pathogens from infected plants on media, how to prepare media, how to check pathogens under microscope.
6- How to control plant pathology by using different types of control such as biological, physical cultural and chemical control.
7- Also they will study pesticide and equipment to categories pesticide.
8- To understand classification, biology, natural history and diversity of insects affecting Plants.
9- To identify insects common to Plant and recognize their damage.
10- To understand the ecology of Plant pests; including host-plant interactions, population dynamics, and natural enemies of insects.
11- To recognize the importance of cultural, physical, biological, and chemical strategies for preventing, controlling and managing Plant pests.
12- They also gain the ability to conduct simple experiments in the area of plant protection, and they are able to unite theoretical knowledge and practical skills in solving problems of plant protection.