

Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Specification Form For The Academic

University: Anbar

College : Department :

College of

Agriculture:

Department of

Plant Protection

Date Of Form Completion : 1/ 6 / 2021

Dean's Name: Dr.

Idham Ali Abed

Dean's Assistant For

Scientific Affairs: Dr.

Mohammed Hamdan

Edan

Head of Department

Dr. Ayoob Obaid

Mohammed

Date: 1/

6/2021

Date: 1/6/2021

Signature

Signature

Date : 1/6/ 2021

Signature

Quality Assurance And University Performance

Manager Date : / 1 / 2021

Signature

Signature
Omay H. AL-Rawi

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Programme Title	Agriculture Vocabulary
4. Title of Final Award	Bachelor of Agriculture
5. Modes of Attendance offered	other
6. Accreditation	Study plan for the fourth stage
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	1/6/2020
9. Aims of the Programme	
	Providing students with knowledge of the nature and methods of diagnosing agricultural pests and combating them from an academic and professional point of view
	Understand the nature of agricultural pests and their livelihood according to scientific standards
	Understand the nature of direct and indirect economic damages caused by agricultural pests and how to deal with them according to correct applied scientific methods
	Provide students with information on how to manage IPM programs of pests
	Develop their awareness regarding dealing with chemical pesticides and how to dispose of their residues

Training students based on the summer training system in the supportive competent authorities, such as the agricultural divisions and the agricultural quarantine

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

- 1- Understand the concept of pest
- 2- Distinguish between a primary lesion and a secondary lesion
- 3- Distinguishing between types of insect, fungal, bacterial, viral and other pests.
- 4- Knowing the level of damage to the pest and when the control order is required
- 5- Knowing the appropriate type of pesticide or pest control and knowing the appropriate timing for the control
- 6- Identification of pesticides and their families and how to deal with them
- 7- Full knowledge of agricultural pest management.

B. Subject-specific skills

- B1 - Knowing how to diagnose the pest
- B 2 - Knowing how to determine the level of damage and the type as well as appropriate method and time of control .
- B3 - Knowing how to manage the integrated crop

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture with the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment Methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about such study.
- 4- Evaluation through periodic monthly exams.

C. Thinking Skills

- C1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C2- Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by the regulatory bodies.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the Directorates of Agriculture, Silos and Agricultural Quarantine

Assessment Methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D1- Determine the type of pest
- D2- Determining the level of economic damage
- D 3- Determining the type, method and timing of the control
- D4- Integrated pest management

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment Methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

11. Programme Structure

Level/Year	Course or Module Code	Course or Module Title	Credit rating	12. Awards and Credits Bachelor Degree Requires (x) credits
first	APP1103	Human rights; freedom & Democracy		
first	APP1106	English language 1		
first	APP1101	English language 2		
first	APP1104	Computer Science 1		
first	APP2110	Computer Science 2		
first	APP2111	General chemistry		
first	APP2108	Principles of horticulture		

first	APP2107	Principle of agricultural economic		
first	APP2102	Principle of food industries		
first	APP2113	Principle of prevention		
first	APP3109	Botany		
first	APP3105	General entomology 1		
first	APP3112	General entomology 2		
first	APP1114	Physical education		
first	APP1115	Band aid		
first	APP2116	Organic chemistry		
first	APP2117	Engineering drawing		
first	APP3118	Zoology		
second	APP1206	Arabic language		
second	APP1201	English language 3		
second	APP1204	English language 4		
second	APP1202	Computer Science 3		
second	APP1203	Computer Science 4		
second	APP2205	Mathematics		
second	APP2002	Machinery & equipment control		
second	APP2008	Principles of field crops		
second	APP2009	Principles of soil		
second	APP2010	Principles of animal production		
second	APP2011	Principles of statistics		
second	APP3212	Insects taxonomy		
second	APP3213	Medical & veterinary insects		
second	APP3214	Plant nutrition		

second	APP3215	Plant physiology		
second	APP1218	Human development		
second	APP1219	Civil defense		
second	APP2220	Flat level		
second	APP2221	Analytic chemistry		
second	APP2222	Agricultural extension		
second	APP3216	Plant taxonomy		
second	APP3217	Microbiology		
third	APP3301	Plant genetic		
third	APP3302	Experimental design & analysis		
third	APP3303	Mycology 1		
third	APP3304	Mycology 2		
third	APP3305	Insect physiology		
third	APP3306	Plant ecology		
third	APP3307	Weed & control methods		
third	APP3308	Plant pathology		
third	APP3309	Bee breeding		
third	APP3310	Nematodes		
third	APP3311	Plant breeding		
third	APP3312	Biochemistry		
third	APP3313	Biotechnology		
third	APP3314	The Nano technique		
third	APP3315	Remote sensing		
fourth	APP3401	Field crops diseases		
fourth	APP3404	Pesticides		

fourth	APP3405	Insect ecology		
fourth	APP3403	Storage pests		
fourth	APP3406	Diseases of vegetables & protected agriculture		
fourth	APP3402	Biological control		
fourth	APP3408	Fruit diseases		
fourth	APP3409	Plant virology		
fourth	APP3407	Agriculture mites		
fourth	APP3410	Field crops insects		
fourth	APP3411	Horticatures insects		
fourth	APP3412	Integrated pest management		
fourth	APP3413	Ecology pollution		
fourth	APP3417	Seminar		
fourth	APP3418	Research project		
fourth	APP3414	Bacteria & plant pathogenic phytoplasma		
fourth	APP3415	Technology for the production of mushroom		

13. Personal Development Planning

Encouraging students to achieve the highest grades during the study stages in the college, so that they can be the first in order to achieve their dreams by completing their studies in postgraduate studies and encouraging them to enroll in postgraduate studies.

14. Admission criteria .

The average of the student in the high school, taking into account the desire of the student

15. Key sources of information about the programme

Methodological books (books, magazines, periodicals, and websites) specialized in the field of plant protection

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- A- Knowledge and Understanding of Integrated pest management
- B- Understand the concept of Integrated pest management
- A2- Distinguish between the types of Integrated pest management
- A 3- Knowing how to diagnose the pest
- A4 Full knowledge of pests management

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

A. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of pests management
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D 1- The ability to determine the type of integrated management
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of pests

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Introduction to Integrated pest management	Stages of development of Integrated pest management	Lecture	quiz
2	2	Historical perspective on Integrated pest management	History Integrated pest management	Lecture	quiz
3	2	Principles of factors in pest management programs	The economics of pests	Lecture	quiz
4	2	Role pesticide in pest management	Advantages, disadvantages and mechanisms of pesticide	Lecture	quiz
5	2	The role Mechanism of resistance plant in pest management	The role of resistance plant in pest management	Lecture	quiz
6	2	Role biological controle in pest management	Knowledge of biological controle in pest management	Lecture	quiz
7	2	Behavioral controle in pest management	Know the types of Behavioral controle	Lecture	quiz
8	2	Cultural methods or practices in pest management	Knowledge of practices in pest management	Lecture	quiz
9	2	Regulation methods in pest management	Dfine of the natural control regulation methods in pest management	Lecture	quiz
10	2	Mechanical &Physical methods in pest management	Knowledge of the control Mechanical &Physical methods in pest management	Lecture	quiz
11	2	Desin of programs & uses in pest management	How to design a pest management program	Lecture	quiz
12	2	Examples of pest for control in pest management	Know the about some successful experiences in pest management	Lecture	quiz

13	2	Role of growth regulators in pest management	Knowledge of the role of growth regulators in pest management	Lecture	quiz
14	2	The role of insect parasites in pest management	Knowledge of the role of insect parasites in pest management	Lecture	quiz
15	2	The role of genetic methods in pest management	Knowledge of the role of genetic methods in pest management	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	<100

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided..

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	
4. Programme(s) to which it contributes	Contributes to the knowledge of Principles of Plant Protection
5. Modes of Attendance offered	
6. Semester/Year	First & second trimester / First & second stage 2020 - 2021
7. Number of hours tuition (total)	72 hours
8. Date of production/revision of this Specification	20/9/2021
9. Aims of the Course	
The subjects of this course (Principles of P. Prot.) briefly covers describing agricultural pests, their types, the economic risks they cause, their impact on agricultural production and ways to reduce their damage .	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Knowledge and Understanding

- 1- Understand the concept of pest
- 2- Distinguish between a primary lesion and a secondary lesion
- 3- Distinguishing between types of insect, fungal, bacterial, viral and other pests.
- 4- Knowing the level of damage to the pest and when the control order is required

B. Subject-specific skills

B1 - Knowing how to diagnose the pest .

B 2 - Knowing how to determine the level of damage and the type and method of appropriate control and at the appropriate time .

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Pest, Pests Types , Degree of Pests	Principles of P.Prot.	electronic	quiz
2	2	Insects and Related Arthropoda	Principles of P.Prot.	electronic	quiz
3	2	External Morphology	Principles of P.Prot.	electronic	quiz
4	2	The External Features , Head , Thorax , Abdomen	Principles of P.Prot.	electronic	quiz
5	2	Antennae, Appendages of Thorax , The Abdominal Appendages	Principles of P.Prot.	electronic	quiz
6	2	Metamorphosis, Types of metamorphosis	Principles of P.Prot.	electronic	quiz
7	2	Exam.1	Principles of P.Prot.	electronic	quiz
8	2	Plant Diseases , Plant Diseases Caused of Fungi	Principles of P.Prot.	electronic	quiz
9	2	Plant Diseases Caused of Bacteria	Principles of P.Prot.	electronic	quiz
10	2	Viruses, Plant Diseases Caused of Nematoda	Principles of P.Prot.	electronic	quiz
11	2	Parasitic Flowering Plants	Principles of P.Prot.	electronic	quiz
12	2	Weeds	Principles of P.Prot.	electronic	quiz
13	2	Rodents, Mites	Principles of P.Prot.	electronic	quiz
14	2	Uses Pesticides to Control Pests	Principles of P.Prot.	electronic	quiz
15	2	Uses Pesticides to Control Pests	Principles of P.Prot.	electronic	quiz
16	2	Exam.1	Principles of P.Prot.	electronic	quiz

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.

C. Thinking Skills

- C1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C2- Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by the regulatory bodies.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D1- Determine the type of pest
- D2- Determining the level of economic damage
- D 3- Determining the type, method and timing of the control
- D4- Integrated pest management.

2. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Insects Pest Management . (2009). Pesticides , principles and its role in agriculture and public health(2006).
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	15
Maximum number of students	35

Assist. Prof. Dr. Khalid W. Ibade
Plant Protection / Pesticides

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

10. Learning Outcomes, Teaching ,Learning and Assessment Methods

C- Knowledge and Understanding

1 lectures include

A - Know the importance of cereals and storage methods of traditional and modern.

(B) Discrimination between the types of damage caused by insects of other stores and other extras.

C - Discrimination between different types of insects of stores, partition methods and life cycles.

D - Determine the best ways to resist insecticides and stacks and reduce damage.

E. Knowledge of other types of stored grain and damage and how to be addressed.

2 - Worksheets

3 - online studies

4 - Scientific visits

5. Duties

B. Subject-specific skills

B1 - Know the appropriate methods for grain storage and how trading

B2 - Know the use of the taxonomic keys for insects and other pests

B3 - Know how the types of pesticides or appropriate methods to avoid injury stores

B4- Ways to take samples and examine the safety of grain storage

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

c. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

D1. Ability to determine the type of damage in the stores

D2 - Ability to determine the type of insect

D3 - Ability to determine the type, method and timing of control

D4 - The ability to know and apply the storage in good management

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

A. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Ability to determine the type of damage in the stores

D2 - Ability to determine the type of insect

D3 - Ability to determine the type, method and timing of control

D4 - The ability to know and apply the storage in good management

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	brief history in the importance of cereal	1 - Why we store grain 2 - The importance of grain storage 3 - Traditional methods of grain storage	Lecture	quiz
2	5	Modern methods in grain storage	1.kinds of modern stores 2. Specification of modern stores 3. Convenient stores for stored grain type	Lecture	quiz
3	5	The damage caused by insects of stores	1.kinds of direct damage 2. Informed damage types 3. The virtual damage and non-virtual damage to the grain	Lecture	quiz
4	5	General characteristics of grain	1. Flowing 2. Pressure 3. Connectivity 4. Breathe	Lecture	quiz
5	5	Physical and chemical properties of stored grain surface	.1.the heat 2. Moisture 3. kinds of Water in the stores	Lecture	quiz
6	5	Water content for safety storage	1.The terms of safety storage. 2.Methodes to take samples to check moisture in grain	Lecture	quiz
7	5	Methods of estimating moisture in stored grain	1. The heating method in the oven 2. Brown method 3. Discharge method 4. Method of resistance to electricity	Lecture	quiz

			5. Carbide Calcium method		
8	5	Drying of grains	Type of drying 1.natural drying 2.artificial drying 3.methods of artificial drying	Lecture	quiz
9	5	General characteristics and anatomical insects	1. external anatomy 2. Internal anatomy 3. Matching 4.kinds of Larvae	Lecture	quiz
10	5	Groups of stores insects	1. Category and diagnosis of cereal insects 2. Classification by damage 3. Classification by proliferation capacity	Lecture	quiz
11	5	environment of insects of stored materials	1. Food 2. Heat 3. Moisture 4. Light 5. Compete	Lecture	quiz
12	5	Sources of attack by grain insects	1.fields infections 2. Store in the field 3. Animal feed stores 4. Stocks 5. Transportation	Lecture	quiz
13	5	Detection of storage insects	1.field detection 2.Laboratory detection	Lecture	quiz
14	5	Methods of controlling cereal insects	1.Traditional methods 2.Modern methods	Lecture	quiz
15	5	Some not an insects pest in stores	1.Rodents 2.Bireds	Lecture	quiz

12. Infrastructure	
Required reading: stores insects „by Dr. Abdulla F. ALAzawy 1983 · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories, periodicals and websites

Community-based facilities (include for example, guest Lectures , internship , field studies)	
--	--

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Plant diseases \ APP3401
4. Programme(s) to which it contributes	Contributes to the knowledge Field crops diseases
5. Modes of Attendance offered	attendance
6. Semester/Year	second trimester / third stage
7. Number of hours tuition (total)	75
8. Date of production/revision of this Specification	18\12\2021
9. Aims of the Course	
	The course aims to introduce the most important diseases affecting field crops such as wheat, barley, corn maize, sorghum, sesame, safflower, sunflower, flax, cotton, beans, alfa alfa and tobacco.
	Introducing the most important methods of control of these diseases
	.

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- D- Knowledge and Understanding
- E- A1- The concept of plant disease
- F- A2- The most important losses caused by plant diseases
- G- A3- Studying the most important pathogens (fungal, bacterial, viral and nematode).
- H- A4- Knowing the most important diseases that affect different cereal crops
- I- A 5- Knowing the most important diseases that affect oil crops
- J- A6- Knowing the most important diseases that affect fiber crops
- K- A 7- Identify the most important diseases that affect forage crops
- L- A8- Finding the best means to combat these diseases

D. Subject-specific skills

- M-B1 - Knowing how to diagnose diseases
- N- B2 - Knowing how to determine the level of damage, the type and method of appropriate control and the appropriate timing
- O- B3 - Knowing how to manage the integrated crop

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

E. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

D 1- The ability to determine the type of plant disease

D 2- The ability to determine the type of pathogen

D 3- The ability to determine the type, method and timing of the control

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of plant disease

D 2- The ability to determine the type of pathogen

D 3- The ability to determine the type, method and timing of the control

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Introduction to plant diseases	1- plant disease 2. Losses caused by plant diseases 3. Methods used in the diagnosis of plant diseases 4. The most important symptoms and signs of illness 5- How do plants defend themselves? 6- The most important pathogens	Lecture	quiz
2	5	wheat diseases	The most important fungal, bacterial and viral diseases that affect	Lecture	quiz
3	5	barley diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
4	5	Rice diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
5	5	Maize diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
6	5	Sorghum diseases	The most important fungal, bacterial and	Lecture	quiz

			viral diseases that affect the crop		
7	5	Sesame diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
8	5	sun flower diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
9	5	diseases of sugar crops	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
10	5	flax diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
11	5	cotton diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
12	5	Bean diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
13	5	Alfa alfa Diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
14	5	Tobacco diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz
15	5	Recognizing and diagnosing nematode diseases	The most important fungal, bacterial and viral diseases that affect the crop	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Plant pathology. Maysir Majeed, Rageb Akef, Iyad Abdul Wahed Al-Hiti 2- Diseases of field crops. 1993. Sergeant Akef Hamad, Maysir Gerges, Kamel Salman
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories, periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- P- Knowledge and Understanding of plant diseases
- Q- Understand the concept of plant diseases
- A2- Distinguish between the types of plant diseases A 3- Knowing how to diagnose the plant diseases
- A4 Full knowledge of plant diseases

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

F. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of plant diseases
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of plant diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of plant diseases management

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to integrated plant diseases

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Introduction to plant diseases, the damage they cause		Lecture	quiz
2	5	Methods of dividing the diseases of intentions		Lecture	quiz
3	5	The main causes of plant diseases and their characteristics		Lecture	quiz
4	5	The most important terms for plant diseases		Lecture	quiz
5	5	Stages of occurrence of plant disease and methods of its spread		Lecture	quiz
6	5	Means of defense by which plants defend against pathogens		Lecture	quiz
7	5	The most important diseases caused by primary fungi and their control		Lecture	quiz
8	5	The most important diseases caused by cystic and basidiomycetes and their control		Lecture	quiz
9	5	The most important diseases caused by bacteria and their control		Lecture	quiz
10	5	The most important diseases caused by viruses and their control		Lecture	quiz
11	5	The most important diseases caused by snake worms and their control		Lecture	quiz
12	5	The most important physiological diseases and ways to combat them		Lecture	quiz
13	5	Modern methods of detecting and diagnosing plant diseases		Lecture	quiz

14	5	semester exam	Knowledge of the role of insect parasites in pest management	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	20
Maximum number of students	<30

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

R- Knowledge and Understanding of plant diseases

S- Understand the concept of plant diseases

A2- Distinguish between the types of plant diseases A 3- Knowing how to diagnose the plant diseases

A4 Full knowledge of plant diseases

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

G. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of plant diseases
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of plant diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of plant diseases management

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to integrated plant diseases

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Introduction to plant diseases, the damage they cause		Lecture	quiz
2	5	Methods of dividing the diseases of intentions		Lecture	quiz
3	5	The main causes of plant diseases and their characteristics		Lecture	quiz
4	5	The most important terms for plant diseases		Lecture	quiz
5	5	Stages of occurrence of plant disease and methods of its spread		Lecture	quiz
6	5	Means of defense by which plants defend against pathogens		Lecture	quiz
7	5	The most important diseases caused by primary fungi and their control		Lecture	quiz
8	5	The most important diseases caused by cystic and basidiomycetes and their control		Lecture	quiz
9	5	The most important diseases caused by bacteria and their control		Lecture	quiz
10	5	The most important diseases caused by viruses and their control		Lecture	quiz
11	5	The most important diseases caused by snake worms and their control		Lecture	quiz
12	5	The most important physiological diseases and ways to combat them		Lecture	quiz
13	5	Modern methods of detecting and diagnosing plant diseases		Lecture	quiz

14	5	semester exam	Knowledge of the role of insect parasites in pest management	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	20
Maximum number of students	<30

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Programme Title	Agriculture Vocabulary
4. Title of Final Award	Bachelor of Agriculture
5. Modes of Attendance offered	other
6. Accreditation	Study plan for the fourth stage
7. Other external influences	Related laws and guidelines
8. Date of production/revision of this specification	18/9/2021
9. Aims of the Programme	
Providing students with knowledge of the nature and methods of diagnosing agricultural pests and combating them from an academic and professional point of view	
Understand the nature of agricultural pests and their livelihood according to scientific standards	
Understand the nature of direct and indirect economic damage caused by agricultural pests and how to deal with them according to correct applied scientific methods	
Provide students with information on how to manage IPM programs of pests	
Develop their awareness regarding dealing with chemical pesticides and how to dispose of their residues	

Training students based on the summer training system in the supportive competent authorities, such as the agricultural divisions and the agricultural quarantine

10. Learning Outcomes, Teaching, Learning and Assessment Methods

H. Knowledge and Understanding

- 1- Understand the concept of pest
- 2- Distinguish between a primary lesion and a secondary lesion
- 3- Distinguishing between types of insect, fungal, bacterial, viral and other pests.
- 4- Knowing the level of damage to the pest and when the control order is required
- 5- Knowing the appropriate type of pesticide or pest control and knowing the appropriate timing for the control
- 6- Identification of pesticides and their families and how to deal with them
- 7- Full knowledge of agricultural pest management.

I. Subject-specific skills

- B1 - Knowing how to diagnose the pest
- B 2 - Knowing how to determine the level of damage and the type and method of appropriate control and at the appropriate time
- B3 - Knowing how to manage the integrated crop

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

C. Thinking Skills

- C1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C2- Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by the regulatory bodies.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1- Determine the type of pest

D2- Determining the level of economic damage

D 3- Determining the type, method and timing of the control

D4- Integrated pest management

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment Methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

11. Programme Structure

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

T- Knowledge and Understanding

A1- Understand insect ecology

A2- Study the history of environmental science

A 3- Understand the ecology of plants and animals.

A4- Understand the environmental determinants of insect growth and reproduction

A5- Understand the effect of food quality on insect reproduction and productivity

A6- Full knowledge of agricultural pest management.

J. Subject-specific skills

B1 - Knowing how to identify suitable environments for the spread and activity of insects

B2 - Knowing how to determine the level of damage and the type and method of appropriate control at the appropriate time

B3 - Knowledge of integrated management to obtain an appropriate control process for the insect pest.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture,

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

K. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1- The ability to determine the appropriate insect environment for a particular insect species

D2- The ability to determine the level of economic damage to insect pests

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to harness physical factors to control a specific insect

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Knowledge of insect ecology	Ecology History and studies of ecology Plant Ecology Animal Ecology Specialized Environmental Studies Environment Physical environment Biotic environment Environmental classification Community Units Links between members of the same type	Lecture	quiz
2	5	Know the environmental factors that determine the growth and reproduction of insects	Specific environmental factors for insect growth and reproduction Physical factors Temperature **Effect of temperature on propagation **Effect of temperature on growth speed **Effect of heat on insects' dormancy **Effect of temperature on productivity **Deadly effect of temperatures outside range	Lecture	quiz
3	5	*** The deadly effect of low temperatures	***Deadly effect for low temperatures *** Deadly effect for freezing ***Deadly effect of high temperatures Moisture or Relative humidity Precipitation moisture The significant negative effects of relative humidity are beyond the tolerance limits	Lecture	quiz

4	5	Know the effect of some physical factors	<ul style="list-style-type: none"> *Effect of heat and humidity together Atmospheric gases light Effect of light on insect activity **Effect of light on the silence of insects **Effect of light intensity on insect movement **Effect of light on laying eggs in insects **Effect of light on growth in insects ** Effect of light in general 	Lecture	quiz
5	5	Know the effect of wind and fire on the insect community	<ul style="list-style-type: none"> Wind Fire Surface fire Crown fire 	Lecture	quiz
6	5	Know the effect of atmospheric pressure, gravity and location on insect activity	<ul style="list-style-type: none"> Atmospheric pressure Earth Gravity Microclimate Second: Place *the soil *Breeding insects and multiple places Third: Food Fourth: Other living organisms 	Lecture	quiz
7	5	Identify the effect of food on the behavior and livelihood of insects	<ul style="list-style-type: none"> Food Elements of food structure Pyramids of the environment Food preference Food sources Quality food 	Lecture	quiz
8	5	To know the effect of the type of food on the life of insects	<ul style="list-style-type: none"> Effects of food quality on insects *Effect of food quality to Survival *Effect of food quality on productivity *Effect of food quality on growth speed Nutrition behavior Food chain Food web 	Lecture	quiz
9	5	Learn about productivity in insects and their levels	<ul style="list-style-type: none"> Productivity Levels Productivity Dispersal Dispersal Forms Mechanical of Dispersal Causes of Dispersal 	Lecture	quiz

10	5	To identify the effect of spreading on the population of insects and its forms	Effect of insect spread on its numbers and environment *Effect of Emigration on the Emigrants and its environment Effect of Immigration on the Imigrants and its environment Effect of Trans- migration on the Trans migrants and its environment Examples of migratory insects	Lecture	quiz
11	5	Know the types of distribution in insects	Distribution distribution Random Uniform distribution Clumped distribution Aggregation	Lecture	quiz
12	5	Knowledge of the process of natural selection in insects	Natural selection and natural balance Natural Selection Causes of natural selection Sexual Selection	Lecture	quiz
13	5	Learn about the natural balance of insects in their environment	Natural Balance Factors that have helped insects resist and tolerate different environmental conditions *Fast mobility *Adaptability	Lecture	quiz
14	5	Understand the theories of dormancy in insects	Diapause Physiological phenomena of insects entering dormancy Break the dormancy phase	Lecture	quiz
15	5	Identify the structure of insects and their impact on survival	* Exoskeleton *Small Size *Metamorphosis *High Fecundity Factors affecting the vitality and reproduction of insects	Lecture	quiz

12. Infrastructure

Required reading:

- CORE TEXTS
- COURSE MATERIALS
- OTHER

OTHER

Special requirements (include for example workshops, periodicals, IT software, websites)	<p>Scientific foundations in insect ecology For Abdul Baqi Muhammad Husayn Ali, Suad Abdullah 1994 Insect Ecology, Second Edition: An Ecosystem Approach charis yusuf https://link.springer.com</p>
Community-based facilities (include for example, guest Lectures , internship , field studies)	<p>https://www.researchgate.net/publication/276175496_Insect_Ecology_and_Integrated_Pest_Management_Ento-231_-_Notes</p> <p>https://www.academia.edu/8401778/Insect_Ecology_Second_Edition_An_Ecosystem_Approach</p> <p>https://www.blackwellpublishing.com/content/bpl_images/content_store/sample_chapter/9781405131148/9781405131148_4_001.pdf</p> <p>https://www.mlsu.ac.in/econtents/1214_Insect%20Ecology-I&II.pdf</p>

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

U- Knowledge and Understanding

- A1- Understand the science of beekeeping
- A2- Identify the types and breeds of honey bees
- A 3- Distinguish between the different pests that infect bees.
- A4- Knowing the economic importance of beekeeping
- A 5- Knowing the correct and modern methods of beekeeping
- A6 - Real knowledge of practical methods for managing the apiary.

L. Subject-specific skills

- B1 - Knowing how a person can become a beekeeper
- B2 - Knowing the appropriate places for setting up apiaries and the economic feasibility of the project
- B3 - Knowing how to deal with the problems facing the beekeeping process

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

M. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in the supporting institutions such as the directorates of agriculture

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to distinguish between suitable and unsuitable areas for the establishment of apiaries

D 2- The ability to identify the appropriate breeds of honey bees

D 3- The ability to identify the types of pests and diseases that affect bees

D 4- The ability to manage beekeeping well

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Initial knowledge about bees	the introduction Development and breeding of bees and signed by the animal kingdom and its types Taxonomic position of bees in the animal kingdom Beekeeping in Iraq Breeds of bees in Iraq	Lecture	quiz
2	5	Knowledge of beekeeping areas and life behavior	The best beekeeping areas in Iraq Sources of nectar and pollen The life behavior of honey bees The life cycle of honey bees mating behavior egg laying behavior	Lecture	quiz
3	5	Know the divisions and ages of the bee insect	Periods of immature roles for honeybees larval stage virgins stage adult stage Formal traits between queens, workers, and males	Lecture	quiz
4	5	Knowing the economic importance of beekeeping	The economic importance of beekeeping Honey and its benefits Royal food and its benefits Wax and its benefits Pollen and its benefits	Lecture	quiz

			Bee venom and its benefits Propolis and its benefits		
5	5	Know the behavior of mating and laying eggs	Honey bee brood production Economical plant pollination Production of fertilized queens and divisions business of individuals Queen's business Housework work	Lecture	quiz
6	5	Knowing the work of the workers throughout the year	The work of the field workers collect nectar pollen collection Pollen collection mechanism collecting water water use	Lecture	quiz
7	5	Learn about the external anatomy of a honey bee	External anatomy of a honey bee The head and its appendages The chest and its appendages The abdomen and its appendages the Queen female kingdom Factors affecting the construction of royal houses Queen production supplies Conditions of the nanny sect Breeding of virgin queens queen production	Lecture	quiz
8	5	Learn about the methods and purpose of artificial feeding	robbery industrial feeding nutrition purposes Signs of a nutritional deficiency types of nutrition Important notes on nutrition Feeding times and concentrations of nutrient solutions	Lecture	quiz

			types of food		
9	5	Recognize the trapping and ways to prevent	natural reproduction (scattering) When does expulsion happen? Reasons for the occurrence of swarming swarming damage spurting marks Methods of preventing swarming	Lecture	quiz
10	5	Identifying late parcels and ways to keep parcels	late swarming expulsion and substitution Keeping and housing parcels Some cases of parcel holding Division of sects The stages of producing good denominations	Lecture	quiz
11	5	Learn about honey sorting and packing tools	honey sorting tools Honey sorting tools from modern cells excretions honey filter Packing tools after sorting	Lecture	quiz
12	5	Learn how to sell honey and packaging	packing containers Honey discs and strips Sorting honey from municipal cells Honey sorting for amateurs and beginners Auxiliary tools for the screening process	Lecture	quiz
13	5	Knowing the locations of the beekeepers and the work of the beekeeper	Apiaries sites disintegrated The work of the beekeeper during the months of the year Actions that honey bees do themselves Dispersal measures taken by the beekeeper Biological and nutritional status of cells before and after dispersal Indoors in the basement Cell dispersal materials	Lecture	quiz
14	5	Identify diseases and pests of bees	bee pest diseases brood diseases	Lecture	quiz

			American brood rot disease Nosemia disease bee paralysis Deformed wings virus		
15	5	Learn about some bee pests	Varroa disease Wax moths Great Wax Moth Minor wax moth red hornet Abi Khudair bird	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Beekeeping for amateurs and beginners / Abdul Baqi Muhammad Al-Ali _ 2011
Community-based facilities (include for example, guest Lectures , internship , field studies)	Book: Diagnosing and treating bee pests and diseases Beekeeper guide magazine Quarterly reports issued by the Plant Protection Department of the Ministry of Agriculture, as well as reports of the Iraqi Honey Bee Disease Institute The comprehensive reference in beekeeping, queens and honey production

13. Admissions	
Pre-requisites	
Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Taxonomy of insects 2/ APP3212
4. Programme(s) to which it contributes	Contributes to the knowledge of the mechanism of insect anatomy
5. Modes of Attendance offered	attendance
6. Semester/Year	First trimester / first stage
7. Number of hours tuition (total)	75
8. Date of production/revision of this Specification	2020/10/18
9. Aims of the Course	
The course aims to introduce students to the Taxonomy of insects, to identify the harms and benefits of insects, to know the parts of a typical insect, the types of development, impossibility, and the division of insects on the basis of the insect ranks of each type.	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- A1- Understand the concept of entomology
- A 2- Distinguish between the different parts of the body in insects
- A3- Identify the structure of each part of the insect's body
- A 4- Full knowledge of the most important benefits and harms caused by insects

N. Subject-specific skills

- B1 - Knowing how to handle insects and making insect models that are impregnated
- B2 - Identify and control beneficial insects and harmful insects

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

o. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to dissect insect pests

D2- The ability to determine the nature of the insect's life and target it at the appropriate time

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Defining entomology and knowing the location of insects in the animal kingdom	1 . Entomology 2. Characteristics of the phylum Arthropod 3. Insect Row Features 4. Factors that helped the spread of insects 5. The human role in increasing the number of	Lecture	quiz
2	5	Learn about the harmful effects of insects	1. Insect damage to agricultural crops and other crops 2. The harm of insects to humans and their domestic animals 3. Insect damage to stored materials	Lecture	quiz
3	5	external anatomy of insects	1. Structur of Bodywall 2. Hypodormis 3. Basement membrane Membrane 4. Ecdysis	Lecture	quiz
4	5	Identify areas of the body or parts of the body	1. Head and its appendages 2. Head positions 3. Antennae and its shapes in different insects	Lecture	quiz
5	5	Recognize the types of eyes in insects	1.. Simple eyes Ocelli 2. The Compound	Lecture	quiz
6	5	Identify the areas of the chest and its attachments	1. Legs in insects 2. Legs mutations	Lecture	quiz
7	5	Learn about the structure of wings in	1. Wing installation 2. Wing veins in insects	Lecture	quiz

		insects			
8	5	Wings Modification	1. Wings netting devices 2. Flight process	Lecture	quiz
9	5	Identifying the abdomen and its internal parts	1. Female egg laying machine	Lecture	quiz
10	5	abdomen in insects	1. Male estrus machine	Lecture	quiz
11	5			Lecture	quiz
12	5			Lecture	quiz
13	5			Lecture	quiz
14	5			Lecture	quiz
15	5			Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Field crops insects (2000) d. Salem Jamil Gerges d. Hamza Kazem Abees d. Mohamed Abdel Karim Mohamed Insect Physiology (1982). Dr.. Thabet Abdel Moneim Aldarkazli. Composition and classification of insects (1980). Dr.. George Nasrallah Rizk General Entomology / Prof. Dr. Iman Mohamed Al-Malo 2018
Community-based facilities (include for example, guest Lectures , internship , field studies)	https://download-learning-pdf-ebooks.com/1521-1-library-books https://books-library.net/free-965590537-download https://faculty.uobasrah.edu.iq/uploads/teaching/1597119015.pdf https://www.et3lemdelivery.com/2018/11/Introduction-to-Entomology-pdf.html

13. Admissions	
Pre-requisites	Holds a high school diploma

Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Garden insects/APP3411
4. Programme(s) to which it contributes	Contributes to the knowledge of Biological control
5. Modes of Attendance offered	lectur
6. Semester/Year	Second/fourth
7. Number of hours tuition (total)	75
8. Date of production/revision of this Specification	2021/6/1
9. Aims of the Course	
The goal is to teach students about the harms of orchads because they cause damage to trees and vegetables in orchards	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- V- Knowledge and Understanding of Integrated pest management
- W- Understand the concept of Integrated pest management
- A2- Distinguish between the types of Integrated pest management
- A 3- Knowing how to diagnose the pest
- A4 Full knowledge of pests management

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

P. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of pests management
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of integrated management

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to integrated management of pests

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method
1	5	General information about horticultural insects	Economic importance ,factors that increase the resulting damage to pests and pests ,and ways in which pests are harmed	Lecture+lab sightings of insect harms
2	5	Pest-control	Insects and applied ,agricultural,genetic,mechanical,and physical control methods	Lecture+lab control methods
3	5	Order similar wings	Their families ,aphids,and aphids life cycle	Lecture+Watching aphids and kinds
4	5	Types of complete aphids life cycles	The complete and incomplete life cycle of aphids	Lecture
5	5	Over the scale family	Main families olive scaly insects ,life cycle ,and microscopic heptiskes,life cycle and control	Lecture+Watching Of olive crustaceans and mealbugs
6	5	The white fly family	Life cycles and necessary methods of combat	Lecture+Watching the white flies
7	5	Family of locusts,bobbies mand short-horns	Nature of damage ,life cycle ,desert locust areas, and control	Lecture+Watching and combating the damage of locusts
8	5	The long-horns bouncy family	The cricket field family,the croup and damage family ,the life cycle and the fight family	Lecture+Watching carob and long-horned bouncers and squeaks
9	5	Stem-diggers and seal beeties	The family types of diggers ,the long horns , the flat-head family ,the dark beetles family ,and the carpenters nest diggers	Lecture+See types and types of excavators in the lab
10	5	Termit insect	Types of intrusive layers ,life cycle ,damage economic importance ,and control	Lecture+Watching ferns that infect trees and building in iraq
11	5	Palm palms	Natural damage ,economic importance , life – cycle	Lecture+Watching palms in the lab
12	5	Citrus insects	Pest species,eastern dream of citrus, microbugs of citrus ,damage ,and life cycle	Lecture+Watch insect species in laboratory and video
13	5	Olive poop	Olive fly-life cycle ,control,olive wrapper beetle ,damage and control	Lecture+Watching olive pest

				damage
14	5	Crusader family insects and pumpkin family insects	Species, importance, life cycle, and struggle	Lecture+see damage via laboratory and video models
15	5	Eggplant families, onions, garlic, shallots	Species, importance, life cycle, and struggle	Lecture+Watching lab viewing ideal models

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Other
Special requirements (include for example workshops, periodicals, IT software, websites)	Google chrome
Community-based facilities (include for example, guest Lectures, internship, field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Medical and veterinary insect/APP3213
4. Programme(s) to which it contributes	Contributes to the knowledge of Biological control
5. Modes of Attendance offered	lectur
6. Semester/Year	First/second
7. Number of hours tuition (total)	75
8. Date of production/revision of this Specification	2021/6/1
9. Aims of the Course	
The goal is to teach students about medical and veterinary insects and families that infect them, their life cycle ,how to transmit them and how to be appropriate for control	

10- Learning Outcomes, Teaching ,Learning and Assessment Methode

- X- Knowledge and Understanding of Integrated pest managment
- Y- Understand the concept of Integrated pest managment
- A2- Distinguish between the types of Integrated pest managment
- A 3- Knowing how to diagnose the pest
- A4 Full knowledge of pests management

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

Q. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of pests management
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of integrated management

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to integrated management of pests

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	History of medical and veterinary entomology	The importance of medicinal and veterinary entomology	Lecture+Collect models of medical and veterinary insects	quiz
2	5	Arthropods as vectors of insect etiologies	Mouth parts in insects of medical and veterinary interest, and the mouth parts are piercing absorbent	Lecture+Collect models of medical and veterinary insects	quiz
3	5	The Relationship of medical insects to pestilence	Mechanical ,biological ,proliferative role in evolution ,proliferative role in division ,non-proliferative role in division ,ovarian transport	Lecture+Collect models of medical and veterinary insects	quiz
4	5	Vectors and their relationship with the pathogen	The strategy transmitted by the pathogen –the effects of the pathogen on the vector – families and species	Lecture+practical lesson	quiz
5	5	Sucking lice and medical importance	Species-head lice –body lice –pubic lice-life lice-diseases that ransmit them	Lecture+practical lesson	quiz
6	5	Lice-borne diseases	Trench fever-epidemic retrograde fever –life cycle-symptoms casused in humans	Lecture+Practical lesson	quiz
7	5	Animal sucking lice	Kinds of lif cycle and control	Lecture+Practical lesson	quiz
8	5	Animal rodent lice	Bird lice-cattle lice –life cycle –medical and control im portance	Lecture+Practical lesson	quiz
9	5	Rank of cricket	The diseases it carries ,life cycle,control,bedbugs,species,i mportanc,habits ,and life cycle	Lecture	quiz
10	5	Nipples and Nipples	Medical importance ,dream of scaling chickens , dream of feathering in poultry,dream of controlling wet scabies and other types	Lecture+practical lesson	quiz
11	5	Flias and their types	The importance of medicine ,life cycle ,and struggle	Lecture+practical lesson	quiz
12	5	Mosquito	General characteristics –life cycle –and factors that influence mosquito distributionbiologic characteristics –diffusion – mosquito response	Lecture+practical lesson	quiz
13	5	The medical importance of mosquitoes	Age of the insect,lethargy,malaria ,symptoms,and their types	Lecture+practical lesson	quiz
14	5	Tsetse flies	Dietary behavior and habits , medical and veterinary	Lecture+Practical lesson	quiz

			significance, animal and man-caused diseases, and the cycle of disease		
15	5	Naughty flies and biters	Houseflies, face flies, battering flies, garbage and waste flies, meat flies, stable flies, horn flies, horse flies, importance and control flies	Lecture+Practical lesson	quiz
16	5	Myiasis	Classification of livestock – sheep-cattle – horse-life cycle and control	Lecture+practical lesson	quiz

12. Infrastructure	
Required reading: <ul style="list-style-type: none"> • CORE TEXTS • COURSE MATERIALS • OTHER 	Other
Special requirements (include for example workshops, periodicals, IT software, websites)	Google chrome
Community-based facilities (include for example, guest Lectures, internship, field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	General entomology 1/APP3105
4. Programme(s) to which it contributes	Contributes to the knowledge of the mechanism of insect anatomy
5. Modes of Attendance offered	attendance
6. Semester/Year	First trimester / first stage
7. Number of hours tuition (total)	50
8. Date of production/revision of this Specification	18/12/2021
9. Aims of the Course	
The course aims to introduce students to the science of entomology, to identify the harms and benefits of insects, to know the parts of a typical insect, the types of development, impossibility, and the division of insects on the basis of the insect ranks of each type.	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- A1- Understand the concept of entomology
- A 2- Distinguish between the different parts of the body in insects
- A3- Identify the structure of each part of the insect's body
- A 4- Full knowledge of the most important benefits and harms caused by insects

R. Subject-specific skills

- B1 - Knowing how to handle insects and making insect models that are impregnated
- B2 - Identify and control beneficial insects and harmful insects

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

s. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to dissect insect pests

D2- The ability to determine the nature of the insect's life and target it at the appropriate time

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Defining entomology and knowing the location of insects in the animal kingdom	1 . Entomology 2. Characteristics of the phylum Arthropod 3. Insect Row Features 4. Factors that helped the spread of insects 5. The human role in increasing the number of	Lecture	quiz
2	5	Learn about the harmful effects of insects	1. Insect damage to agricultural crops and other crops 2. The harm of insects to humans and their domestic animals 3. Insect damage to stored materials	Lecture	quiz
3	5	external anatomy of insects	1. Structur of Bodywall 2. Hypodormis 3. Basement membrane Membrane 4. Ecdysis	Lecture	quiz
4	5	Identify areas of the body or parts of the body	1. Head and its appendages 2. Head positions 3. Antennae and its shapes in different insects	Lecture	quiz
5	5	Recognize the types of eyes in insects	1.. Simple eyes Ocelli 2. The Compound	Lecture	quiz
6	5	Identify the areas of the chest and its attachments	1. Legs in insects 2. Legs mutations	Lecture	quiz
7	5	Learn about the structure of wings in	1. Wing installation 2. Wing veins in insects	Lecture	quiz

		insects			
8	5	Wings Modification	1. Wings netting devices 2. Flight process	Lecture	quiz
9	5	Identifying the abdomen and its internal parts	1. Female egg laying machine	Lecture	quiz
10	5	abdomen in insects	1. Male estrus machine	Lecture	quiz
11	5			Lecture	quiz
12	5			Lecture	quiz
13	5			Lecture	quiz
14	5			Lecture	quiz
15	5			Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Field crops insects (2000) d. Salem Jamil Gerges d. Hamza Kazem Abees d. Mohamed Abdel Karim Mohamed Insect Physiology (1982). Dr.. Thabet Abdel Moneim Aldarkazli. Composition and classification of insects (1980). Dr.. George Nasrallah Rizk General Entomology / Prof. Dr. Iman Mohamed Al-Malo 2018
Community-based facilities (include for example, guest Lectures , internship , field studies)	https://download-learning-pdf-ebooks.com/1521-1-library-books https://books-library.net/free-965590537-download https://faculty.uobasrah.edu.iq/uploads/teaching/1597119015.pdf https://www.et3lemdelivery.com/2018/11/Introduction-to-Entomology-pdf.html

13. Admissions	
Pre-requisites	Holds a high school diploma

Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	General entomology 2\ APP3112
4. Programme(s) to which it contributes	Contributes to the knowledge of the mechanism of insect anatomy
5. Modes of Attendance offered	attendance
6. Semester/Year	Second trimester / first stage
7. Number of hours tuition (total)	50
8. Date of production/revision of this Specification	2021/9/18
9. Aims of the Course	The course aims to introduce students to the internal parts of insects, the mechanism of action of each of them, and the differences between insects belonging to different insect orders according to the form, working mechanism, and parts of each of them.

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

Z- Knowledge and Understanding

A1- Understand the concept of entomology

A 2- Distinguish between the different internal organs in insects

A3- Understand the mechanism of action of the various internal organs in insects

A4- Full knowledge of agricultural pest management

T. Subject-specific skills

B1 - Knowing how to anatomy of insects

B2 - Identifying the mechanism of work of the devices and the possibility of investing them in controlling the pest by knowing its weaknesses

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

U. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to dissect insect pests

D2- The ability to determine the nature of the insect's life and target it at the appropriate time

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Internal anatomy of insects and knowledge of internal organs in general	1. The internal anatomy of insects 2. Digestive system 3. Anterior alimentary canal 4. Middle alimentary canal 5. Posterior gut	Lecture	quiz
2	5	Learn how to feed insects	1. Nature of Insect Feeding 2. The excretory system	Lecture	quiz
3	5	Knowledge of the respiratory system of insects and its associated parts	1. Respiratory system 2. Components of the respiratory system in insects 3. Classification of insects on the basis of the number of respiratory stomata 4. Breathing in terrestrial insects	Lecture	quiz
4	5	Learn about the breathing mechanism of aquatic insects	1. Respiration in aquatic insects 2. Closed bronchial system 3. Open bronchial system 4. Breathing in internally parasitized insects	Lecture	quiz
5	5	Knowledge of the circulatory system in insects	1. Rotational device 2. Rotary components	Lecture	quiz
6	5	Knowing the composition of insect blood	1. The composition of the blood 2. Types of blood cells	Lecture	quiz
7	5	Learn about the muscular system and its structure	1. Muscular system 2. Structure of the muscle	Lecture	quiz

			3. Muscle types		
8	5	Learn the anatomy of the nervous system	1. nervous system 2. Anatomy of the nervous system 3. Types of neurons 4. Central nervous system 5. Visceral system 6. Sensory organs	Lecture	quiz
9	5	Knowledge of the male reproductive system and its parts	1. Male reproductive system	Lecture	quiz
10	5	Knowledge of the female reproductive system and its parts	1. The female reproductive system	Lecture	quiz
11	5			Lecture	quiz
12	5			Lecture	quiz
13	5			Lecture	quiz
14	5			Lecture	quiz
15	5			Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Field crops insects (2000) d. Salem Jamil Gerges d. Hamza Kazem Abees d. Mohamed Abdel Karim Mohamed Insect Physiology (1982). Dr.. Thabet Abdel Moneim Aldarkazli. Composition and classification of insects (1980). Dr.. George Nasrallah Rizk General Entomology / Prof. Dr. Iman Mohamed Al-Malo 2018
Community-based facilities (include for example, guest Lectures , internship , field studies)	https://download-learning-pdf-ebooks.com/1521-1-library-books https://books-library.net/free-965590537-download https://faculty.uobasrah.edu.iq/uploads/teaching/1597119015.pdf https://www.et3lemdelivery.com/2018/11/Introdu

	ction-to-Entomology-pdf.html
--	------------------------------

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

AA- Knowledge and Understanding

A1- Understand the concept of entomology

A2- Identifying some important pests that cause economic losses

A3- Recognize the symptoms of infection and damage to various insect pests.

A4- Knowing the level of damage to insect pests and when the control order is required

A 5- Knowing the type of pesticide or appropriate pest control, with knowledge of the appropriate timing for the control

A6- Full knowledge of the management of insect pests on agricultural crops plants.

v. Subject-specific skills

B1 - Knowing how to diagnose the insect species through the phenotypic characteristics or symptoms of infection

B2 - Knowing how to determine the level of damage and the type and method of appropriate control at the appropriate time

B3 - Knowledge of integrated pest management of a particular crop.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

w. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to identify the types of harmful insects

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D4 - The ability to properly manage the insect pest by relying on the best ways to control it

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	1- Entomology 2- class of insects 3- Characteristics of a class of insects 4- Evolution and Impossibility [Metamorphosis Insect Orders -5	Knowledge of entomology and identification of the characteristics of the class of insects and the types of evolution in insects	Lecture	quiz
2	5	Gryllotalpa gryllotalpa Life cycle, damage and control method Desert locusts -2 Schistocerca gregaria Life cycle, damage and control method	Biological knowledge, description and damage of the desert locust and carp insects	Lecture	quiz
3	5	-1 Ocnogyna loewii -2 Microcerotermes diversus Study the life cycle, damage and control method	Knowledge of the outward appearance, lifestyle and damage of spring worms and termites	Lecture	quiz
4	5	1- Eurygaster integriceps -2 Haplothrips	Knowledge of the external appearance, lifestyle and	Lecture	quiz

		Study the life cycle, damage and control method	damage of the sunn and thrips insects		
5	5	-1 Schizaphis graminum -2 Oriak muscosa -3 Syringopais temperatella Study the life cycle, damage and control method	Knowledge of the structure and knowledge of the external shape, lifestyle and damage to an insect of wheat, ear breaker and wheat leaf borer	Lecture	quiz
6	5	-1 Anisoplia austriaca -2 Zabrus morio -3 Phytophaga destructor Study the life cycle, damage and control method	Knowledge of the structure, external appearance, lifestyle and damage of the wheat-making insect, the chewer of wheat seedlings and the Hechian fly	Lecture	quiz
7	5	-1 Cephus pygmaeus -2 Rhopalosiphum (Aphis) maidis Study the life cycle, damage and control method	Knowledge of the structure, external shape, lifestyle and damage of the two insects of the Saw-wheat wasp and from the aphid corn	Lecture	quiz
8	5	-1 Leucania loreyi -2 Sesamia critica -3 stalk borers, Aphis	Knowledge of the structure, outward appearance, lifestyle, and damage to cornworms, corn stalk borers, Aphis	Lecture	quiz

		Aphis craccivora Study the life cycle, damage and control method	craccivora		
9	5	Therioaphis maculata Study the life cycle, damage and control method	-1 Knowing the external appearance and -2 symptoms of infection and the control of my insects from Therioaphis maculata and the Hypera fascocinerea	Lecture	quiz
10	5	Study the life cycle, damage and control method	-1 Knowing the Aphis fabae appearance and -2 symptoms of Bruchus rufimanus control of each insect of the aphid Bruchidius incarnates bean beetle, the legume worm and -4 Cosmolyce boeticus borer -5 Phytomyza atricarnis	Lecture	quiz
11	5	Study the life cycle, damage and control method	-1 Knowing the Aphis gossypii external Clover -2 symptoms of Bemisia gossypipedra control of each of (Bemisia tabaci) the cotton bug, -3 Thrips tabaci and onion thrips Lind	Lecture	quiz

		Study the life cycle, damage and control method			
12	5	<p>-1 Oxycarenus hyalinipennis external cost appearance and</p> <p>-2 symptoms of Spodoptera Littoralis (Boisd)</p> <p>Study the life cycle, damage and control method</p>	Knowing the external appearance and symptoms of infection and control of both the cottonseed bugs and the cotton leaf worm	Lecture	quiz
13	5	<p>-1 Pegomyia hoyoscyami</p> <p>-2 Phyllotreta cruciferae</p> <p>-3 Myzus persicae</p> <p>Study the life cycle, damage and control method</p>	Knowing the external appearance and symptoms of infection and control of each of the beet leaf borer, the cruciferous flea beetle, and the aphid green peach	Lecture	quiz
14	5	<p>-1 Spodoptera (Laphygma) exigua</p> <p>-2 Agrotis ipsilon</p> <p>-3 Heliothis armigera</p> <p>-4 Eris insulana</p> <p>Boisd</p> <p>Study the life cycle, damage and control method</p>	Knowing the external appearance and symptoms of infection and control of each of the green worm, cutworm, American cotton nut worm and thistle	Lecture	quiz

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	https://www.alroqey.com/ebook/%D8%AD%D8%B4%D8%B1%D8%A7%D8%AA-%D8%A7%D9%84%D9%85%D8%AD%D8%A7%D8%B5%D9%8A%D9%84-%D8%A7%D9%84%D8%AD%D9%82%D9%84%D9%8A%D8%A9 https://www.noor-book.com/tag/%D8%B9%D9%84%D9%85-%D8%A7%D9%84%D8%AD%D8%B4%D8%B1%D8%A7%D8%AA https://hampton.ext.vt.edu/content/dam/hampton_ext_vt_edu/entomology.pdf http://ia600700.us.archive.org/4/items/textbookofentomo00pack/textbookofentomo00pack.pdf
Community-based facilities (include for example, guest Lectures , internship , field studies)	Field crop insects / Iyad Youssef Al-Haj Ismail Economic Insects / Ibrahim Kaddouri

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Acarology 4/2/ APP3407
4. Programme(s) to which it contributes	Contributes to the knowledge of the mechanism of insect anatomy
5. Modes of Attendance offered	attendance
6. Semester/Year	First trimester / first stage
7. Number of hours tuition (total)	75
8. Date of production/revision of this Specification	2020/3/18
9. Aims of the Course	The course aims to introduce students to the Acarology, to identify the harms and benefits of Mites, to know the parts of a typical Mites, the types of development, impossibility, and the division of Mites on the basis of the Mites ranks of each type.

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- A1- Understand the concept of Mites
- A 2- Distinguish between the different parts of the body in Mites
- A3- Identify the structure of each part of the Mites body
- A 4- Full knowledge of the most important benefits and harms caused by Mites

x. Subject-specific skills

- B1 - Knowing how to harden Mites and making insect models that are impregnated
- B2 - Identify and control beneficial Mitesand harmful Mites

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

y. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to dissect insect pests

D2- The ability to determine the nature of the insect's life and target it at the appropriate time

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Introduction – Division of the history of ecology . What the Mites? The reasons that made the Mites turn from a secondary pest into a major pest	Introduction – Division of the history of ecology . What the Mites? The reasons that made the Mites turn from a secondary pest into a major pest	Lecture	quiz
2	5	Economic Importance of Mites. The importance of the mites for the plant. The importance of the mites for stored foodstuffs. Mites broker in the transmission of plant pathogens. Factors Affecting Mites Existence. Factors Affecting Mites Distribution.	Economic Importance of Mites. The importance of the mites for the plant. The importance of the mites for stored foodstuffs. Mites broker in the transmission of plant pathogens. Factors Affecting Mites Existence. Factors Affecting Mites Distribution.	Lecture	quiz
3	5	Taxonomic Status. Dispersion. Habit & habitats. Free living mites. A- Predators Species. B- Phytophagous sp. Parasitic Mites.	Taxonomic Status. Dispersion. Habit & habitats. Free living mites. C- Predators Species. D- Phytophagous sp. Parasitic Mites.	Lecture	quiz
4	5	The manifestations of life. Respiratory. Sensory. Locomotion. The life of Mites in general. Feeding. Reproduction of Mites.	The manifestations of life. Respiratory. Sensory. Locomotion. The life of Mites in general. Feeding. Reproduction of Mites.	Lecture	quiz

		Oviposition. Life History.	Oviposition. Life History.		
5	5	Mites and Host plants. <u>Host Preference.</u> <u>Host Competition.</u> Effect of some factors affecting the seasonal activity of plant Mites. Temperature Humidity Rain Light Food Natural enemies Water Regulation in Phytophagous Mites Water Regulation in Movable stages.	Mites and Host plants. <u>Host Preference.</u> <u>Host Competition.</u> Effect of some factors affecting the seasonal activity of plant Mites. Temperature Humidity Rain Light Food Natural enemies Water Regulation in Phytophagous Mites Water Regulation in Movable stages.	Lecture	quiz
6	5	Study of some important families of the Phytophagous mites in Iraq. Some Economical and Biological Aspects of Tetranychidae <u>Dispersion .</u> (Acari :Tetranychidae) <i>Oligonychus afrasiaticus</i> (McG.) <i>Tetranychus urticae</i> (Koch) (Acari: Tetranychidae)	Study of some important families of the Phytophagous mites in Iraq. Some Economical and Biological Aspects of Tetranychidae <u>Dispersion .</u> (Acari :Tetranychidae) <i>Oligonychus afrasiaticus</i> (McG.) <i>Tetranychus urticae</i> (Koch) (Acari: Tetranychidae)	Lecture	quiz
7	5	Family : Tenuipalpidae. Pomegranate False Red Mite Family : Tarsonemidae <i>Polyphagotarsonemus latus</i> (B)	Family : Tenuipalpidae. Pomegranate False Red Mite Family : Tarsonemidae <i>Polyphagotarsonemus latus</i> (B)	Lecture	quiz
8	5	Family: Eriophyidae. The Economic Importance of the Eriophyidae <u>Malformation</u> Transmission of viruses causing plant diseases Remove cell contents and inject the toxins <u>Rust</u> <u>Miners</u>	Family: Eriophyidae. The Economic Importance of the Eriophyidae <u>Malformation</u> Transmission of viruses causing plant diseases Remove cell contents and inject the toxins <u>Rust</u> <u>Miners</u>	Lecture	quiz

9	5	Acaricides. Principles of Classifying Acaricides. According to Toxicity . According to the Treated Surface Coverage. Systemic pesticides are divided according to their degradation.	Acaricides. Principles of Classifying Acaricides. According to Toxicity . According to the Treated Surface Coverage. Systemic pesticides are divided according to their degradation.	Lecture	quiz
10	5	According to The Mode of Entry. According to The mode of action. According to The Origin. According to the Chemical Structure.	According to The Mode of Entry. According to The mode of action. According to The Origin. According to the Chemical Structure.	Lecture	quiz
11	5	Inorganic Acaricides. <u>Fluride compounds.</u> Fluride mode of Action. <u>Sulphure</u> Use of Sulphur. Sulphur Mode of Action.	Inorganic Acaricides. <u>Fluride compounds.</u> Fluride mode of Action. <u>Sulphure</u> Use of Sulphur. Sulphur Mode of Action.	Lecture	quiz
12	5	Natural organic Acaricides. <u>OiLs</u> Oils Mode of Action . Synthetic Organic Acaricides Mode of Action of Organophosphorus Acaricides Mode of Action of Carbamate Acaricides.	Natural organic Acaricides. <u>OiLs</u> Oils Mode of Action . Synthetic Organic Acaricides Mode of Action of Organophosphorus Acaricides Mode of Action of Carbamate Acaricides.	Lecture	quiz
13	5	Pest resistance to the application of chemical pesticides History The concept of resistance and its types Resistance Vigor Tolerance Susceptibility	Pest resistance to the application of chemical pesticides History The concept of resistance and its types Resistance Vigor Tolerance Susceptibility	Lecture	quiz
14	5	Detection of resistance strain Causes of pest resistance for pesticide action Species of resistance	Detection of resistance strain Causes of pest resistance for pesticide action Species of resistance	Lecture	quiz
15	5	How resistance arises Speed of resistance appearance	How resistance arises Speed of resistance appearance	Lecture	quiz

		Solutions to the problem of resistance Objectives of the PRM system	Solutions to the problem of resistance Objectives of the PRM system		
--	--	--	--	--	--

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Abu alhab ,1982.economic mites.iraq Almallah .2013.apliication and principal in acarology .iraq
Community-based facilities (include for example, guest Lectures , internship , field studies)	https://download-learning-pdf-ebooks.com/1521-1-library-books https://books-library.net/free-965590537-download https://faculty.uobasrah.edu.iq/uploads/teaching/1597119015.pdf https://www.et3lemdelivery.com/2018/11/Introduction-to-Entomology-pdf.html

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

10. Learning Outcomes, Teaching ,Learning and Assessment Methods

BB- Knowledge and Understanding

1 lectures include

A - Know the importance of plant virus in plant diseases.

(B) Ability to diagnose viral diseases in plant

C - Prediction of effects and results caused by viral diseases

2 - Worksheets

3 - online studies

4 - Scientific visits

5. Duties

z. Subject-specific skills

B1 - Ability to distinguish viral injury for the rest of the causes

B2 - Know viral symptoms and distinguish the type of injury

B3 - Methods to resist viral injurie

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

AA. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- A. Definition of the importance of plant diseases, especially viral
- B. Ability to diagnose viral diseases in plant
- C. Prediction of effects and results caused by viral diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

B. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Ability to determine the type of damage in the stores

D2 - Ability to determine the type of insect

D3 - Ability to determine the type, method and timing of control

D4 - The ability to know and apply the storage in good management

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	What viruses, historical profile of virus	1 - Why we study viruses 2 - The importance of virus	Lecture	quiz
2	5	The nature of the virus and chemical installation	1.kinds of virus genome 2. nitrogen basics in viruses	Lecture	quiz
3	5	Economic and scientific importance to study viruses and diseases they cause.	Losses of viral infection And kinds of diseases	Lecture	quiz
4	5	Shapes and sizes of viruses	Classification of virus by sizes and shapes	Lecture	quiz
5	5	Types of viral symptoms	External symptoms Internal symptoms	Lecture	quiz
6	5	Types of viral inclusion bodies	1.crystall inclusion bodies 2.amorphous bodies	Lecture	quiz
7	5	Latent infection	Types of latent infection The masked infection	Lecture	quiz
8	5	Mixed viral infection	Synergism, antagonism	Lecture	quiz
9	5	Transmission of virus	Transmission by insects, fungus, nematode and others	Lecture	quiz
10	5	Movement of virus	1.slow movement 2.fast movement	Lecture	quiz
11	5	Multiplication of virus	1.RNA virus multiplication 2.DNA virus multiplication	Lecture	quiz
12	5	Determination of end dilution point of	Experimental work	Lecture	quiz

		virus			
13	5	Serological tests	ELISA test double diffusion test and fast test	Lecture	quiz
14	5	Kinds of virus	Season virus Horticulture virus	Lecture	quiz
15	5	Control methods	Chemical and horticulture way	Lecture	quiz

12. Infrastructure	
Required reading: plant viruses „by Dr. Abdullatif bahgat 1983 · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories, periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Insect physiology /APP3305
4. Programme(s) to which it contributes	Contributes to the knowledge of Biological control
5. Modes of Attendance offered	lectur
6. Semester/Year	First/third
7. Number of hours tuition (total)	75
8. Date of production/revision of this Specification	2021/6/1
9. Aims of the Course	
The course is designed to teach students the insect interior internal organ function and structure	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- CC- Knowledge and Understanding of Integrated pest management
- DD- Understand the concept of Integrated pest management
- A2- Distinguish between the types of Integrated pest management
- A 3- Knowing how to diagnose the pest
- A4 Full knowledge of pests management

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

BB. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of pests management
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D 1- The ability to determine the type of integrated management
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of pests

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Benefits of entomology and body wall preparation of dissecting tools and American cockroaches	Benefits of Entomology and importance of body walls in insects cutex layer and chemical structure	Lecture+Practical lesson	quiz
2	5	Chemical structure of the cutikel surface the inner epidermal layer and the molting cycle of the insect body	To learn about the internal and ahemical structure of the cuticles the mechanics of molting and the structure of the new body	Lecture+Anexplosive of the quettle layers and a practical microscope examination	quiz
3	5	Insects Digestive system anterior middle and posterior digestive tract	To know the structure and function of each part of the digestive tract and the anatomy of the digestive system	Lecture+antom y of the digestive system	quiz
4	5	GI tractAccessories	Lower lip glands digestive enzymes in insects proteins carbohydrates and fats	Lecture	quiz
5	5	Lipid –breaking enzymesand ytheir areas of absorption in the gastrointestinal tract slicing of salivary glans	Absorption of proteins absorption of inorganic substances absorption of water and digestive products	Lecture+practical lesson	quiz
6	5	Microbiology in relation to digestion	Types of microorganisms and their location in the insects body	Lecture+Re-anatomy of the digestive system	quiz
7	5	The excretion and excretion organs of insects –dissecting the organs of the excetion organs	Functinos of the excretory system organs atypical excretion –oral glands –oral kidneys and the chamber of excretion	Lecture+Anatomy of the output organs	quiz

8	5	Typical excretory system in insects	Mechanical extrusion through the Malpigi tubes the role of the intestine in extrusion and the role of the rectum in extrusion	Lecture+Anatomy of the Gastrointestinal and Excretory organs	quiz
9	5	Typical excretory system	Nitrogen-excretion method in rods and water and saline balance in insects	Lecture+Anatomy of the output organs	quiz
10	5	Respiratory system in insects and division of insects by number of functional and closed spiracles	Spiracles-trechea-air bags-mechanical breathing Inhalation and exhalation	Lecture+The anatomy of the bronchial system in insects and their spiracles	quiz
11	5	Insects circulatory system dissection of the heart and dorsal blood vessel	The dorsal blood vessel ,the heart ,the pterygoid muscles,the annular vessels,the back diaphragm , abdominal,visceral,and pulsating organs	Lecture+The dissection of the heart and the dorsal blood vessel in insects and the viewing of the osteoppre	quiz
12	5	Blood in the insect redissected the heart and dorsal blood vessels	Blood cells-blood plasma function – blood circu;lation – systolic and diastolic inhalation in insects	Lecture+Re-dissection of the heart and dorsal blood vessel of the American cockroach	quiz
13	5	Reproductive and female insect anatomy	Types of ovarian tubes the process of egg formation and ripening-the process of laying egg	Lecture+Anatomy	quiz
14	5	Male reprodutive system the dissection of the male organ in the American cockroach	Struture of the male system the process of sperm formation	Lecture+Anatomy	quiz
15	5	Nervous system and sense organs in insects nerve cord dissection in American cockroaches	Components of the central ,symmetric peripheral and structural major nervous system subesophageal ganglia and brain functions	Lecture+Antomy of the nerve cord of the American roach	quiz

12. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	other
Special requirements (include for example workshops, periodicals, IT software, websites)	Google chrome
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

EE- Knowledge and Understanding

A1- Understand the concept of fungi

A2- Distinguish between the types of fungi

A 3- Distinguish between diseases caused by fungi

A4- Knowing the level of damage to fungi and when it requires control

A 5- Knowing to determine the type of pesticide or appropriate control of fungi with knowledge of the appropriate timing for the control

A 6- Full knowledge of fungi management.

CC.Subject-specific skills

B1 - Knowing how to diagnose fungi and their diseases

B2 - Knowing how to determine the level of damage and the type and method of appropriate control at the appropriate time

B3 - Knowing how to manage the integrated crop

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

DD. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type of fungi disease
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of fungi diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D 1- The ability to determine the type of fungi disease
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of fungi diseases

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Knowledge of mycology, its general characteristics and the nature of its nutrition	1. Plant mycology 2. Features of fungi 3. fungi groups 4. fungi feeding	Lecture	quiz
2		Knowing the mycology and the losses caused by fungi	1. History 2. The economics of plant fungi	Lecture	quiz
3	5	Knowledge of the internal and external anatomy of fungi	1. The external shape and internal structure of the fungi 2. General composition of the body	Lecture	quiz
4	5	Knowledge of the body cavity and digestive system organs and functions	1. classification of fungi	Lecture	quiz
5	5	Method of respiration reproductive system	Respiration system and types	Lecture	quiz
6	5	Classification of myxomycota	Study of class myxomycota	Lecture	quiz
7	5	Identification structure of myxomycota	The structure of myxomycota	Lecture	quiz
8	5	Method of taxonomy and Disease cause by it	Class oomycetes	Lecture	quiz
9	5	Knowing the classification of fungi	Class Eumycota	Lecture	quiz
10	5	Knowing the mechanism of causing damage to plants and the effect of the environment on fungi	1. Adverse effects of plant fungi 2. Ecological relationships of plant fungi	Lecture	quiz
11	5	The important of chytridiomycetes	Class chytridiomycetes	Lecture	quiz
12	5	disease cause by it	Class zygomycetes	Lecture	quiz

13	5	Taxonomy and damage it	Study of Ascomycota	Lecture	quiz
14	5	Taxonomy and damage it	Study of basidiomycota	Lecture	quiz
15	5	Recognizing and diagnosing fungi diseases	Some fungi diseases	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories, periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- FF- Knowledge and Understanding of plant diseases
- GG- Understand the concept of plant diseases
- A2- Distinguish between the types of plant diseases A 3- Knowing how to diagnose the plant diseases
- A4 Full knowledge of plant diseases

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture
With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

EE. Thinking Skills

- C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type Full knowledge of plant diseases
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of plant diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of plant diseases management

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to integrated plant diseases

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Required learning outcomes	Stages of development of plant diseases	Presence and electronic	quiz
2	5	Introduction to fungi, the damage and benefits they cause	History plant diseases	Presence and electronic	quiz
3	5	Fungi feeding methods	The economics of pests	Presence and electronic	quiz
4	5	The general composition of the types of fungi	Advantages, disadvantages and mechanisms of pesticide	Presence and electronic	quiz
5	5	Methods of reproduction in fungi	The role of resistance plant in pest management	Presence and electronic	quiz
6	5	Methods of breathing in fungi	Knowledge of biological controle in pest management	Presence and electronic	quiz
7	5	Basics of naming and dividing fungi	Know the types of Behavioral controle	Presence and electronic	quiz
8	5	The most important general characteristics of the kingdom of primary fungi	Knowledge of practices in pest management	Presence and electronic	quiz
9	5	Fundamentals of the division of primary fungi	Dfine of the natural control regulation methods in pest management	Presence and electronic	quiz
10	5	The most important diseases caused by primary fungi and ways to combat them	Knowledge of the control Mechanical &Physical methods in pest management	Presence and electronic	quiz
11	5	The most important general characteristics of the kingdom of the fungi	How to design a pest management program	Presence and electronic	quiz
12	5	Fundamentals of the	Know the about some	Presence and	quiz

		division of fungi	successful experiences in pest management	electronic	
13	5	The most important diseases caused by fungi and ways to combat them	Knowledge of the role of growth regulators in pest management	Presence and electronic	quiz
14	5	The most important characteristics of true fungi are the basis for their division	Knowledge of the role of insect parasites in pest management	Presence and electronic	quiz
		semester exam			

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	20
Maximum number of students	<30

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Plant Protection
3. Course title/code	Pesticides
4. Programme(s) to which it contributes	Contributes to the knowledge of pesticides
5. Modes of Attendance offered	attendance
6. Semester/Year	First trimester / fourth stage 2020 - 2021
7. Number of hours tuition (total)	72 heures
8. Date of production/revision of this Specification	20/9/2021
9. Aims of the Course	
Providing students with knowledge of the nature and methods of diagnosing agricultural pests and combating them from an academic and professional point of view	
Understand the nature of agricultural pests and their livelihood according to scientific standards	
Understand the nature of direct and indirect economic damage caused by agricultural pests and how to deal with them according to correct applied scientific methods	
Provide students with information on how to manage IPM programs of pests	
Develop their awareness regarding dealing with chemical pesticides and how to dispose of their residues	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Knowledge and Understanding

- 1- Understand the concept of pest
- 2- Distinguish between a primary lesion and a secondary lesion
- 3- Distinguishing between types of insect, fungal, bacterial, viral and other pests.
- 4- Knowing the level of damage to the pest and when the control order is required
- 5- Knowing the appropriate type of pesticide or pest control and knowing the appropriate timing for the control .
- 6-Identification of pesticides and their families and how to deal with them .

B. Subject-specific skills

- B1 - Knowing how to diagnose the pest .
- B 2 - Knowing how to determine the level of damage and the type and method of appropriate control and at the appropriate time .
- B3 - Knowing how to manage the integrated crop .

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture With the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.

C. Thinking Skills

- C1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion
- C2- Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.
- C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation
- C4- Emphasizing the importance of combating financial and administrative corruption by the regulatory bodies.

Teaching and Learning Methods

- 1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation .
- 2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture with the participation of all students in the section with the professor to give the material as a kind of interaction.
- 3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis .
- 4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine .

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D1- Determine the type of pest
- D2- Determining the level of economic damage
- D 3- Determining the type, method and timing of the control
- D4- Integrated pest management.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Pests and damages it causes	Pesticides	attendance	quiz
2	2	Economic threshold	Pesticides	attendance	quiz
3	2	Pesticide , Benefits and Disadvantage of pesticides	Pesticides	attendance	quiz
4	2	History review to use of pesticides	Pesticides	attendance	quiz
5	2	indicators to be followed to control	Pesticides	attendance	quiz
6	2	Toxicology, Toxicity, Dissipation of pesticide	Pesticides	attendance	quiz
7	2	Metabolism of pesticides	Pesticides	attendance	quiz
8	2	Classification of pesticides with pests and formulation	Pesticides	attendance	quiz
9	2	Absorption and translocation of pesticides	Pesticides	attendance	quiz
10	2	Classification of insecticides	Pesticides	attendance	quiz
11	2	Classification of fungicides	Pesticides	attendance	quiz
12	2	Classification of Herbicides	Pesticides	attendance	quiz
13	2	Classification of Rodenticides	Pesticides	attendance	quiz
14	2	Classification of Nematicides	Pesticides	attendance	quiz
15	2	Resistance , Pesticides Analysis	Pesticides	attendance	quiz
16	2	Environmental Pollution by pesticides	Pesticides	attendance	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Chemical pesticides in plant protection .1979 . Pesticides (1993) . Pesticides , principles and its role in agriculture and public health(2006) .
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	15
Maximum number of students	35

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

HH- Knowledge and Understanding Biological control

A1- Understand the concept of Biological control

A2- Distinguish between the types of Biological control

A 3- Knowing how to diagnose the pest

A4- Knowing the of Biological control agent in pestcontrol

A 5- Full knowledge of pests management.

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

FF. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type of Biological control
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- The ability to determine the type of Biological control

D 2- The ability to determine the level of economic damage

D 3- The ability to determine the type, method and timing of the control

D 4- The ability to integrated management of pests

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Introduction to biological control	Stages of development of biological control	Lecture	quiz
2	5	Historical perspective on biological control	History biological control	Lecture	quiz
3	5	Economic important of biological control	The economics of pests	Lecture	quiz
4	5	Biological control of plant disease	Advantages, disadvantages and mechanisms of biological control to plant diseases	Lecture	quiz
5	5	Antibiosis , Lysis . competition	Knowledge of bio-antagonism , lysis and competition between organisms	Lecture	quiz
6	5	Parasitism , Synergistic interaction	Knowledge of bio-synergistic between organisms	Lecture	quiz
7	5	Insect pests	Know the types of agricultural pests and their damages	Lecture	quiz
8	5	Economic threshold and injury levels	Knowledge of Economic threshold and injury levels	Lecture	quiz
9	5	Natural control	Dfine of the natural control	Lecture	quiz
10	5	Biological control for insect	Knowledge of the vital methods of pests control	Lecture	quiz
11	5	Insect parasites	Know the types of insect parasites	Lecture	quiz
12	5	Insect Predators	Know the types of insect predators	Lecture	quiz
13	5	Entomopathogenic bacteria & viruses	Types and mechanism of Entomopathogenic bacteria & viruses	Lecture	quiz

14	5	, Entomopathogenic fungi , nematodes	Types and mechanism of Entomopathogenic fungi , nematodes	Lecture	quiz
15	5	Defense mechanism in insects	Knowledge of insect defenses	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories, periodicals and websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	>100

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

II- Knowledge and Understanding

A1- Understand the concept of nematology

A2- Distinguish between the types of nematodes

A 3- Distinguish between diseases caused by nematodes.

A4- Knowing the level of damage to nematodes and when it requires control

A 5- Knowing to determine the type of pesticide or appropriate control of nematodes with knowledge of the appropriate timing for the control

A 6- Full knowledge of nematode management.

GG. Subject-specific skills

B1 - Knowing how to diagnose nematodes and their diseases

B2 - Knowing how to determine the level of damage and the type and method of appropriate control at the appropriate time

B3 - Knowing how to manage the integrated crop

Teaching and Learning Methods

1- Adopting the method of giving lectures and linking each topic with examples from the reality of the agricultural work situation

2- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

With the participation of all students in the section with the professor to give the material as a kind of interaction.

3- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

4- Summer training in supporting institutions such as the directorates of agriculture, silos and agricultural quarantine

Assessment methods

1 - Through the participation of students in the lecture, based on their prior preparation of the subject.

2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.

3- Giving the students a case study and dividing the students into groups to write a report about that study.

4- Evaluation through monthly exams.

HH. Thinking Skills

C 1- Instilling values and principles in the student by emphasizing the independence of the statistician when expressing his impartial opinion

C 2 - Emphasis on personal characteristics such as integrity, honesty, confidentiality and morals.

C3 - Statement of the importance of the rules of professional conduct and its exposure to legal penalties in case of violation

C4- Emphasizing the importance of combating financial and administrative corruption by regulatory agencies.

Teaching and Learning Methods

- D 1- The ability to determine the type of nematode disease
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

Assessment methods

- 1 - Through the participation of students in the lecture, based on their prior preparation of the subject.
- 2 - Giving them an exercise as a homework and asking for it to be solved with separate papers, collected from them in the next lecture.
- 3- Giving the students a case study and dividing the students into groups to write a report about that study.
- 4- Evaluation through monthly exams.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D 1- The ability to determine the type of nematode disease
- D 2- The ability to determine the level of economic damage
- D 3- The ability to determine the type, method and timing of the control
- D 4- The ability to integrated management of nematode diseases

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5	Knowledge of nematology, its general characteristics and the nature of its nutrition	1. Plant nematology 2. Features of nematodes 3. Nematode groups 4. Nematode feeding	Lecture	quiz
2	5	Knowing the nematology and the losses caused by nematodes	1. History 2. The economics of plant nematodes	Lecture	quiz
3	5	Knowledge of the internal and external anatomy of nematodes	1. The external shape and internal structure of the nematode 2. General composition of the body	Lecture	quiz
4	5	Knowledge of the body cavity and digestive system organs and functions	1. body cavity 2. Digestive system	Lecture	quiz
5	5	Knowledge of the structure and functions of the nervous and reproductive system	1. nervous system 2. Reproductive system 3. The female reproductive system	Lecture	quiz
6	5	Knowledge of the vital functions of nematodes	1. Male reproductive system 2. Biological functions of nematodes	Lecture	quiz
7	5	Learn about the movement and life cycle of nematodes	1. Nematode movement 2. The life cycle of nematodes	Lecture	quiz
8	5	Learn about the methods of reproduction and methods of laying eggs in nematodes	1. Methods of reproduction 2. Methods of laying eggs	Lecture	quiz

9	5	Knowing the classification of nematodes	1. Divisional orders of nematodes 2. Main groups of plant nematodes	Lecture	quiz
10	5	Knowing the mechanism of causing damage to plants and the effect of the environment on nematodes	1. Adverse effects of plant nematodes 2. Ecological relationships of plant nematodes	Lecture	quiz
11	5	Knowing the nature of the relationship of nematodes with fungi and bacteria	1. The relationship of nematodes with other organisms 2. The relationship of nematodes with fungi and bacteria	Lecture	quiz
12	5	Knowing the nature of the relationship of nematodes with viruses and other nematodes	1. The relationship of nematodes with viruses 2. The relationship of nematodes with its different species	Lecture	quiz
13	5	Knowledge of nematode control methods	Nematode control methods (preventive methods) 1. Agricultural Quarantine 2. Hygiene	Lecture	quiz
14	5	Control of nematodes	High Efficiency Roads 1. Resistant varieties 2. Agricultural cycle 3. Chemical pesticides 4. Special control	Lecture	quiz
15	5	Recognizing and diagnosing nematode diseases	Some nematode diseases	Lecture	quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	OTHER
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratories, periodicals and websites

Community-based facilities (include for example, guest Lectures , internship , field studies)	
--	--

13. Admissions	
Pre-requisites	Holds a high school diploma
Minimum number of students	10
Maximum number of students	100<

