Course Description Form

1. Course Name:
Insect taxonomy
2. Course Code:
TAIN220
3. Semester /
Year:2end / 2025-2024
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
groups
6. Number of Credit Hours (Total) / Number of Units (Total)
75 Hours ,3.5 Units
7. Course administrator's name (mention all, if more than one name)
Name:dr.Haitham mohieldeen mohammad Email: dr.haithamjalal@uomosul.edu.iq
8. Course Objectives
1- The learner should be able to identify the differences between insect groups and their gen characteristics 2- Choosing the suitability of the taxonomic key or taxonomic method for a species or class of insects 3- Differentiate between the levels of the classification pyramid and know the characteristics conditions of each level. 4- Understanding taxonomic characteristics and using them to distinguish between insect groups 5- Enable the student to know the types of insect nomenclature (scientific, common, local) and the te and meanings of each nomenclature. 6- Familiarity with the information the author needs and what is available to him to master his work 7- The classifier's awareness of individual differences that hinder correct diagnosis. 8- Enabling the student to know the most important insect orders in the field of plant and ani protection and the most important insects belonging to them in our environment. The student should be able to make simple insect taxonomic keys of different types
9. Teaching and Learning Strategies

Strategy	

	- Interactive lecture -Brainstorming - Dialogue and discussion -Field Training - Practical exercises - Field project -Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	a1: The concept of general taxonomy of living organisms and insect taxonomy in particular is known b2: Expresses the goals and importance of taxonomy in a systematic way a2: Explains the concepts and duties of the taxonomy specialist.	Taxonomy, its definition, , importance, and tasks of the taxonomist	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3	a1: Identify the location of the insect class within the animal kingdom a53: The student's ability to classify the class of insects within the animal kingdom	Introduction to insect taxonomy		
2	2	a4: Compares the taxonomic trait and the diagnostic trait b1: Specifies the types of taxonomic characters used in classifying insects and the special cases for using any type of them. b3: The student should be able to employ morphological and other characteristics in the diagnostic process.	Taxonomic traits, their definition, types, (morphological traits, functional traits, environmental traits, geographical traits)	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 1, final exam
	3	a1: Identify the tools used to collect insects C6: Ability to use insect collection tools.	Tools used to collect insects		
3	2	a1: Able to demonstrate knowledge and understanding of methods of discrimination and diagnosis in insects and which methods are most accurate and easy. a3: Uses insect taxonomic keys to reach the correct diagnosis b6: The student should be able to design a simple diagnostic key for an insect group.	Diagnosis and its methods, classification key.	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 1, final exam
	3	c6: The ability to use insect hunting methods the terrestrial or aquatic environment. a55: Providing them with the necessary experience to identify and identify the environment of each insect and its classification.	Methods of catching and collecting insects		
4	2	a2: Able to explain the basics of common nomenclature and its components b2 Is able to express his ideas regarding the most important taxonomic characteristics that he can use in	Training on taxono keys and scientifi nomenclature	Interactive lecture, brainstorming,	Short test Semester exam 1, final exam

		designing a simple classification key for an insect group. c4: Able to use the characteristics of the host plant, the insect, and the appearance of the infestation in constructing the common name. b3: Community members participate and work to educate them about the importance of diagnosis and its impact on the success of the control process b6: Able to suggest the appropriate key for a specific insect group		dialogue and discussion, field training, and self-learning	
	3	A1: Introducing the student to all types of traps used to catch various types of insects according to their environment. C6: The ability to use traps and field practice to teach students how to use each trap according to its function.			
5	2	A1 is able to show knowledge of the types of division and what is the best and most modern division that gives indications about the convergence and divergence between different insect species. C1: Community members participate and work to educate them about the importance of insect diagnosis in the field of pest control. b5: The student should be able to evaluate the types of division and make a comparison between them.	claasification: its definition, objectives, types, natural classification, industrial classification	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Short test Semester exam 1, final exam
	3	A1: Teaching students ways to kill and preserve insects for short or long periods. C2: Field practice of the method of killing insects and transporting them to the laboratory to prepare them for the hardening stages, each according to his method, based on the size of the insect.	Insects trap		
6	2	A4: Differentiates between the taxonomic ranks and their conditions (type, subspecies, higher ranks) b4 To be able to distinguish the external structure of insects and the kinship links between insect groups within one order, one class, or even one phylum. d1: Acquiring the communication skills necessary to deal with confidence and certainty at the individual and group levels C1: Community members participate and work to raise their awareness of the importance of distinguishing between individuals of the same species, species of the same body, or genera of the same family... etc. C1: Able to express the biological definition of the species and its boundaries	Classification ranks (type, type, higher ranks) + individual variations I	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 1, final exam
	3	A1: Knowing the methods of hardening insec C6: The ability to use laboratory	Hardening of wings		

		methods for hardening soft insect wings, either by using a wooden insect hardening board or by attaching them with papers and pins.			
7	2	A2: Able to explain the characteristics of wingless insects and their economic importance. A2: To be able to understand the diagnostic characteristics of species belonging to the wingless insect order C2: Able to express the reasons that prompted researchers to raise the ranks of wingless insects above the hexapods.	individual variati 2 Division of insect group of wingless insects)	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Short test, monthly test 2, final test
	3	A1: Identifying methods of preserving insect models and their types C6: Students' ability to memorize insect models temporarily or permanently as needed to carry out the classification process and the materials used for that.	Preserving insect models		
8	2	A2: Able to understand the division of ancient-winged insects (squirrels and mayflies) and their importance and role in the agricultural environment.	winged insects, ancient winged insects section	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 2, final exam
	3	A1: Identifying the group of winged insects, ancient winged insects section A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of classifying them and placing them on the classification scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment.			
9	2	A4: He is able to compare the orders of ectopteran insects, their characteristics, and the most important types of economic importance. C1: Expresses the most important features of the interior of the wings	neo-winged insects, orders of ectopteran insects 1	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 2, final exam
	3	C1: Identifying the group of winged insects, New Winged Insects Section A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of classifying them and placing them on the classification scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment.			

10	2	A2: Able to explain the apparent characteristics of the stages of insects belonging to the order Hemiptera that are of economic importance.	neo-winged insects, orders of ectopteran insects 2	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Short test, monthly test 2, final test
	3	A1: Identify a group of wingless insects A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of classifying them and placing them on the classification scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment.	Examination of the characteristics of the wingless insects section		
11	2	A2: Able to know the types and shapes of the intermediate stages of the order Coleoptera.	Neoptera insects, Orders of endoptera insects 1	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 2, final exam
	3	A1: Identifying the winged insects through their characteristics and ways of dividing them between internal and external wings A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of classifying them and placing them on the classification scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment.	Department of winged insects		
12	2	A1: Able to demonstrate sound knowledge and understanding of the phenotypic characteristics of the order Lepidoptera and its economic importance in the agricultural environment. C1: Able to identify families belonging to order Lepidoptera	Neoptera insects, Orders of endoptera insects 2	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 2, final exam
	3	A1: Identify the endpterygota insects through their distinguishing characteristics and the methods of transformation that distinguish them from the rest. A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of classifying them and placing them on the classification	Department of Endopteran Insects		

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		scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment.			
13	2	A2: Able to explain the basics of dividing the order Hymenoptera into its different families. b6 Able to distinguish the characteristics of the order Hymenoptera and its most important families	Neoptera insects, Orders of endoptera insects 3	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 2, final exam
	3	A1: Identifying the class of ectopteran insects through the characteristics that distinguish them and the methods of transformation that distinguish them from the rest. A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of classifying them and placing them on the classification scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment.	Department of ectopteran insects		
14	2	b2 explains the most important characteristics of the order Diptera, which can be diagnostic characteristics. A5 distinguishes between families belonging to the order Diptera and its most important species of medical and agricultural importance.	Neoptera insects, Orders of endoptera insects	Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning	Semester exam 2, final exam
	3	A1: Teaching students about the types of classification keys C6: Students' ability to use methods distinguish between insect species, that is distinguish between lower taxonomic ra within one order or family.	Taxonomic keys		
15	2	a2 Able to understand the characteristics of the order Reticoptera and its most important families C1 expresses the characteristics, features, and economic importance of endoptera insect groups.	Neoptera insects, Orders of endoptera insects	Interactive lecture, brainstormin g, dialogue and discussion, field training, and self-learning	Final exam
	3	A1: Identify the modern insect class, the endopterygian order, through its characteristics A55: The student will be able to classify the group by displaying the insect models that were collected and preserved by them for the purpose of			

		classifying them and placing them on the classification scale, and identifying these groups through their fixed characteristics that are unique to them as an independent group. And learn about its importance in the environment			

practical part

	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Quiz 1	week 4	2.5	2.5
2	REPORT	Week 5	2.5	2.5
3	Quiz 2	Week 7	2.5	2.5
4	Quiz 3	Week 10	2.5	2.5
5	theoretical test 1	Week 6	7.5	7.5
6	theoretical test 2	Week 14	7.5	7.5
7	Practical field project	Week 15	5	5
8	Field evaluation	Week 3 , 5	2	2
9	Quiz 1	Week 1	1	1
10	Quiz 2	Week 4	0.5	0.5
11	Quiz 3	Week 14	1	1
12	drawings and homework	Week 16,8,9,10,11,12,13	5.5	5.5
13	Final practical test		20	20 %
14	Final theoretical test		40	40%
	the total		100	100%

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14	Structure and classification of insects / George Nasrallah 1995
15	
Recommended books and references (scientific journals, reports...)	Al-Mallah, Nizar Mustafa, 2012. Classification of insects theory and practice. Al-Yazouri Printing and Publishing
Electronic References, Websites	Research gate, Google scholar

Practical subject teacher

M.D. Moatasem Ibrahim Chamoun

Theoretical subject teacher

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