Describe the environment of insects

1. Course Name
2. : Course Code
NEC418
3. Semester / Year : Annual
Fall semester/2024-2025
4. Date this description was prepared
2022 /2 / 1
5. Available forms of attendance
In-person + online
6. :(study hours (total)/number of units (total Number of
75 hours / 3.5 units
7. (Name of the course administrator (if more than one name is mentioned
Assistant Professor Doctor. Mohammed Yousuf Sayed Ghani mohammed_yousuf76@uomosul.edu.iq Assistant Lecturer. Ahmed Thamer Hammadi ahmed.thamer@uomosul.edu.iq
• that must be available to should be able to define the concept of insect environment and the information . know the types of insects • .Choosing the suitability of factors affecting the insect environment • Differentiating between different planning systems and the appropriate ones • .in establishing an insect laboratory Understand the basics of planning and use them • Distinguishing between types of insects according to the information acquired during the study of their . environment and learning about the nature of their livelihood and reproduction • formation the trainee needs and what is available to him to master his work in dealing Familiarity with the in . with insects and their environments • .The student's awareness of the factors affecting insects and their environment and how to deal with them • catching tools, what should be taken into account when catching them in -ropriate type of insectDetermine the the field, and identifying their types • A comprehensive study of various types of insects and determining the controls and conditions that must be . environment laboratory in the insect met
9. Teaching and learning strategies
- Interactive lecture - Brainstorming - Dialogue and discussion - Field Training - Practical exercises - Field project - education -Self -

10. Course structure					
week	hours	outcomes Required learning	Name of the unit or topic	Learning method	Evaluation method
1	theoretical 1	a1 Learn about the concept of insect ecology : .and the origin of insects b1 He possesses the practical and mental : in the knowledge and concepts that help him .insect formation units of	Insect ecology and modern ecological divisions of population units	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester exam 1 , final exam
	practical 3	C58 : The student masters the concepts related to the sections of ecology, types of oceans, and basic concepts in insect ecology.	Introduction to divisions of ,ecology ecology, types of oceans, types of migrations	Interactive lecture, brainstorming, dialogue and discussion, field learning -training, self	Short practical test 1
2	theoretical 1	a2 Determines systems for the distribution : of insect and spread of insects and types habitats b1 He possesses the practical and mental : identify knowledge and concepts that help him .insects the population spread of c5 Balances the process of insect spread in : .different environments	Environmental factors determining insect growth Population spread	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester exam 1 , final exam
	practical 3	C7: The student applies the correct practical steps in surving insects .	Insect trapping process Important matters in the inventory process, types of inventory	Interactive lecture, brainstorming, dialogue and discussion, field training, practical -exercises, and self learning	Direct drawing And my homework
3	theoretical 1	a2 Determines the regulations and laws of : environmental factors and insect inventory	Laws of specific environmental factors Insect inventory	Interactive lecture, dialogue ,brainstorming -and discussion, self learning	Semester exam 1 , final exam
	practical 3	C12: Applies methods of inventorying and estimating the size of insects practically in the agricultural field .	Modern techniques in insect control	,Interactive lecture brainstorming, dialogue and discussion, field learning -training, self	My laboratory work
4	theoretical 1	a2 Determines the methods of insect : reproduction c4 Draws methods for using samples in : insects	Insect reproduction ability Methods of counting how to use -insects samples	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester exam 1 , final exam report ,
	practical 3	C12: Applies various methods to separate insects from plant parts .	Methods of separating insects from plant parts , repellent chemicals, brushes, washing, and .imprinting	Interactive lecture, brainstorming, dialogue and discussion, field training, practical -exercises, and self learning	Practical short test 2 direct , drawing
5	theoretical 1	a2 Determines methods for studying insect : ecology c4 Draws methods for using samples in : insects In plant residues, above the soil surface, and inside plant tissues	Methods of studying ecology associated -Plant insects -Plant waste insects surface above the soil plant tissues -	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester exam 1 , final exam report ,
	practical 3	d1 Acquiring the communication skills : necessary for methods of counting and	A field visit for students to see the	Interactive lecture, brainstorming, dialogue	Field evaluation

		insects estimating the size of	insects spread in the fields inside the university	and discussion, field training, practical -exercises, and self learning	
6	theoretical 1	a2 Determines ecological succession in : insects C4 Draw plans for the natural balance of : insects in their environments d1 Acquire skills to estimate insect numbers :	Ecological succession natural selection and - natural equilibrium Estimate numbers in the Insects terrestrial and aquatic environment	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Short test, final test
	practical 3	C58: Master the concepts and methods of enumerating insects associated with animals (living and dead).	-Estimation of animal associated insects , enumeration of insects from living hosts I	Interactive lecture, brainstorming, dialogue and discussion, field training, practical -exercises, and self learning	Direct drawing and homework
7	theoretical 1	C4 Draw plans for the natural balance of : insects in their environments + first exam	nsect counts from dead hosts .Codification + first exam	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester exam 2 , final exam
	practical 3	C2: He diagnoses the causes of the Myiasis process in animals and practices good therapeutic measures to recover the affected animals.	Myaisis process + Semester test1	Interactive lecture, brainstorming, dialogue and discussion, field practical ,training exercises, field project, learning-self	Semester test1
8	theoretical 1	a3 Employs appropriate tools and skills for : methods of estimating insect numbers c4 Draws plans and programs for host : selection and how to estimate the number of in terrestrial environments insects	Host selection and specialization Proportional enumeration method Methods for estimating the number of insects in the terrestrial environment	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester am 2 , ex final exam
	practical 3	C9: Implement various practical methods to estimate the number of insects in the aquatic environment.	Estimating the number of insects in the aquatic environment , the living -number of free insects in the water of aquatic Preparation plant insects Number of benthic .insects	Interactive lecture, brainstorming, dialogue and discussion, field training, practical -exercises, and self learning	Direct drawing and homework
9	theoretical 1	a4 to management system is used pest A : .control them c3 Use what the researcher needs to choose : floating traps for insects	Integrated pest management and control system The forgetful census methods of -method fishing in traps Baits Traps	Interactive lecture, brainstorming, dialogue -discussion, self and learning	Semester exam 2 , final exam
	practical 3	C58: Master the concepts of the relative census methods .	Methods used in proportional enumeration	Interactive lecture, brainstorming, dialogue and discussion, field	Direct drawing and

				training, practical -exercises, and self learning	homework
10	theoretical 1	a2 Defines garden systems, types of gardens, : various design principles and elements, and their urban and environmental importance c5 Successfully balances the investment and : of ornamental plants and employs them in use a way that suits the coordination processes of .different types and styles of gardens	Types of public gardens and their foundations	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Semester test 2
	practical 3	C3: The student uses the necessary tools he needs and what is available to him to master the use of various types of insect traps.	Insect traps , division of traps in general	Interactive lecture, brainstorming, dialogue discussion, field and training, practical -exercises, and self learning	Direct drawing and homework
11	theoretical 1	a2 Determines the systems and laws for pest : control c5 Balances the methods of using traps and : insects light traps to estimate the number of	Biocontrol of insects Traps Optical	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Final test
	practical 3	C6: Types of pheromone traps are used to predict the outbreak of insect pests .	Pheromone traps , light traps pheromone traps .Types of light traps	Interactive lecture, brainstorming, dialogue and discussion, field training, practical -exercises, and self learning	Direct drawing and homework
12	theoretical 1	a2 Determines the effect of environmental : such as temperature and humidity on factors insects c5 Balances and determines the method for : of injury estimating the manifestations	Effect of temperature and humidity Manifestation of injury	Interactive lecture, brainstorming, dialogue -self ,and discussion learning	Final test
	practical 3	C58: Master the basics of the process of estimating insect pests and using them to evaluate the health and safety of crops.	Estimating insects by the appearance of infestation , on leaves, stems, fruits, .and waste	Interactive lecture, brainstorming, dialogue and discussion, field training, practical -exercises, and self learning	Direct drawing and homework
13	theoretical 1	a2 Determines the effect of light factor on : insects c3 field Uses what the researcher needs in : and laboratory work for environmental studies of insects	Light effect Field and laboratory work for environmental studies	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Final test
	practical 3	d2: Dealing with modern methods efficiently that enable him to accomplish his scientific and practical tasks. In transmitting the different stages of insect pests.	Field and laboratory work for environmental studies ,	Interactive lecture, brainstorming, dialogue field ,and discussion training, practical -exercises, and self learning	Direct drawing and homework
14	theoretical 1	c3 Uses what the researcher needs to : critical economic limit of the calculate the damage c5 Balances the insect feeding process and : factors on it the effect of these	Effect of food on insects Calculate the critical economic limit of damage	Interactive lecture, brainstorming, dialogue -and discussion, self learning	Short test, final test
	practical 3	d2: Dealing with modern methods efficiently that enables him to accomplish his scientific and practical tasks related to various environmental studies.	Field and laboratory work for environmental studies transmission of ,	Interactive lecture, brainstorming, dialogue n, field and discussio training, practical	Homework

			parasites and predators	-exercises, and self learning	
15	1	c5 Balances the insect feeding process and : the effect of these factors on it + Second exam	insect transportation static and mobile) (stages	,Interactive lecture brainstorming, dialogue -and discussion, self learning	Short test, final test
	practical 3	C8: Develops practical methods for breeding parasites and predators to resist insect pests	Transmission of parasites and predators + Semester test2	lecture, Interactive brainstorming, dialogue and discussion, field training, practical exercises, field project, learning-self	Semester test 2 Final test

11. Course evaluation

T	Calendar methods	(Calendar date (week	Class	Relative % weight
1	Report 1	fourth week	2.5	2.5
2	Report 2	The fifth week	2.5	2.5
	(Short test (1Quiz	sixth week	2	2
	(Short test (2Quiz	The fourteenth week	2	2
	(Short test (3Quiz	The fifteenth week	1	1
	(Semester test (1	the sixth week	7.5	7.5
	(Semester test (2	difficult The eleventh week is	7.5	7.5
8	Final theoretical test	Final semester exams	40	40
9	Practical field project	The fifteenth week	5	5
10	Field evaluation	The third and fifth week	2	2
	(Short practical test (1Quiz	The first week	1	1
	(Short practical test (2Quiz	fourth week	0.5	0.5
	(Short practical test (3Quiz	The fourteenth week	1	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test	Final semester exams	20	20
	the total	100	%100	%100

12. Learning and teaching

(Required textbooks (methodology, if any	Insect Ecology book by Dr. Muhammad Abdel Karim
(Main references (sources	- Insect Ecology book by Dr. Muhammad Abdel Karim
Recommended supporting books and references (scientific journals, (....reports	Insect Ecology: An Ecosystem Approach /Timothy D. Schowalter
	https://www.amazon.com/s?i=stripbooks&rh=p_27%3ATimothy+D.+Scholter&s=relevancerank&text=Timothy+D.+Schowalter&ref=dp_byline_sr_bk_1

Theoretical subject teacher
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