



Module (Course Syllabus) Catalogue 2022-2023

College/ Institute	Khabat Technical Institute	
Department	Plant Protection	
Module Name	Insect Taxonomy	
Module Code	INT404	
Degree	Technical Diploma <input checked="" type="checkbox"/>	Bachler <input type="checkbox"/>
	High Diploma <input type="checkbox"/>	Master <input type="checkbox"/> PhD <input type="checkbox"/>
Semester	4	
Qualification	Ph.D. in Entomology	
Scientific Title	Assistant Professor	
ECTS (Credits)	7	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	5	
Weekly hours (Theory)	(2) hr Class	(72) Total hrs Workload
Weekly hours (Practical)	(3) hr Class	(54) Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Zewar Zainal Omar	
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Lecturer (Practical)	Zewar Zainal Omar	
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Websites	http://epu.edu.iq	

Course Book

<p>Course Description</p>	<p>The importance of studying the insect taxonomy lies in teaching students the history of insect classification, the bases of their classification, the different types of insect orders, knowledge of the basics of taxonomy, how to classify insects, and knowing the differentiation between them by the external appearance (Morphology) of the insect first by noting the type of wings and mouth parts, the type of antennae and the shape of the legs, as well as they are study how to dissect. To know the differentiating between one species and another, and teaching them to draw those important parts of the insect that are relied upon in the science of taxonomy and how the taxonomic keys work to distinguish between a group of insects collected by the students.</p>			
<p>Course objectives</p>	<ol style="list-style-type: none"> 1. Identify to Order, at sight, any common insect 2. Identify to Family, at sight and with the aid of keys, several members of common Orders 3. Correctly spell all Family names 4. For each taxon discussed in lecture: <ol style="list-style-type: none"> a. name host, or habitat of adults b. describe the general life history c. name, or describe, any unusual characteristics shared with other taxa 			
<p>Student's obligation</p>	<ol style="list-style-type: none"> 1- Seminar 2- Presentation 3- Homework 4- Report 5- Quiz 6- Collecting Samples 			
<p>Required Learning Materials</p>	<p>Teaching using Power point, data show, white board, practices, video.</p>			
<p>Evaluation</p>	<p>Task</p>	<p>Weight (Marks)</p>	<p>Due Week</p>	<p>Relevant Learning Outcome</p>
<p>Paper Review</p>				
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Assignments</p>	<p>Homework</p>	<p>5</p>	<p>4</p>	<p>5%</p>
	<p>Class Activity</p>	<p>2</p>	<p>2</p>	<p>2%</p>
	<p>Report</p>	<p>5</p>	<p>4</p>	<p>5%</p>
	<p>Seminar</p>	<p>5</p>	<p>4</p>	<p>5%</p>
	<p>Essay</p>			
	<p>Project</p>			
<p>Quiz</p>		<p>8</p>	<p>6</p>	<p>8%</p>
<p>Lab.</p>		<p>10</p>	<p>4</p>	<p>10%</p>
<p>Midterm Exam</p>		<p>25</p>	<p>5</p>	<p>25%</p>
<p>Final Exam</p>		<p>40</p>	<p>12</p>	<p>40%</p>
<p>Total</p>		<p>100</p>		<p>100%</p>

<p>Specific learning outcome:</p>	<ul style="list-style-type: none"> • Ability to identify insect families from each order of the class Insecta • Ability to explain the evolution of arthropods, from basal hexapods through Antiliophora • Understanding of the relationships of synapomorphies to the major insect radiations • Ability to properly collect, preserve and label insect specimens 	
<p>Course References:</p>	<p>Borrer, D.J. and DeLong, D.M. 1954. An introduction to study of insects ,Holt, Rinehart and Winston, Newyork,1030pp.</p> <p>Arnett Jr, R.H., 2000. American insects: a handbook of the insects of America north of Mexico. Crc Press.</p> <p>Barnard, P.C., 2011. The royal entomological society book of British insects. John Wiley & Sons.</p> <p>Gibb, T.J. and Oseto, C., 2019. Insect collection and identification: techniques for the field and laboratory. Academic Press.</p> <p>Foottit, R.G. and Adler, P.H. eds., 2009. Insect biodiversity: science and society. John Wiley & Sons.</p> <p>Grimaldi, D., Engel, M.S., Engel, M.S. and Engel, M.S., 2005. Evolution of the Insects. Cambridge University Press.</p> <p>1- http://www3.telus.net/conrad/docs/entorders.html</p> <p>2- http://uqu.edu.sa/page/ar/103488</p> <p>3- http://bugguide.net/node/view/52/tre</p> <p>4- http://www.insectsexplained.com/03external.ht</p>	
<p>Course topics (Theory)</p>	<p>Week</p>	<p>Learning Outcome</p>
<p>Taxonomy, its history and function</p>	<p>1</p>	
<p>kingdom of living organs, characteristics and its Phylum, Phylum Arthropoda, Taxonomic key of Classes</p>	<p>2</p>	
<p>The species, subspecies, and higher categories, Taxonomic characters</p>	<p>3</p>	

Steps of identification, Classification, Nomenclature and identification of insects and their relatives (Phylum: Arthropoda and classes)	4	
Taxonomic discrimination major types of variation, The international rules of zoological nomenclature	5	
Classification of Insects; Study of insects Order, Subclass: Apterygota, Order: Collembola, Thysanura, Protura, Diplura	6	
Subclass: Pterygota, Order: Ephemeroptera, Orthoptera, Dictyoptera, Phasmida	7	
Order: Odonata, Dermaptera, Isoptera	8	
Order: Hemiptera, Homoptera	9	
Order: Anoplura, Mallophaga, Thysanoptera, Plecoptera	10	
Order: Neuroptera, Siphonoptera, Mecoptera, Zoraptera	11	
Order: Diptera, Coleoptera, Lepidoptera, Hymenoptera	12	
Practical Topics	Week	Learning Outcome
Study the insect collection and preserving.	1	
study the principles of the classification of insect orders.	2	
study the order orthoptera and scientific classification and characteristics.	3	
study the order Hemiptera and Homoptera scientific classification and other orders.	4	
study the order Odonata and Ephemeroptera scientific classification and other orders.	5	
study the order Coleoptera.	6	
study the order Hymenoptera (Wasps, Ants and Bees).	7	
study the order Lepidoptera, Dermaptera.	8	
study the order Diptera, Isoptera.	9	
visit to the field to survey insects.	10	
study the order Neuroptera, Mallophaga and Anoplura	11	
how to learn key of insect orders.	12	

Questions Example Design

Q1: Write the scientific name and the Order of the following .

Common name	Scientific name	Order

**Q2: Formulate an appropriate taxonomic key for the identified the following :-
Orders of Class Insecta .**

Q3: Question sample:

- 1- Scientific classified of this order.
- 2- Write the parts that point.
- 3- Write the function of this parts.
- 4- Defined between this suborder.
- 5- What is the parts and give the examples?
- 6- Fell the blank.

Extra notes:

External Evaluator