Course Specification
(Bachelor)

Course Title:	Entomology
Course Code:	BIO 1353
Program:	Bachelor of Science in Biology
Department:	Biology
College:	Science
Institution:	Imam Mohammad Ibn Saud Islamic University
Version:	1
Last Revision Date:	17 sptember 2024

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A. General information about the course:

1. Course Identification

1. Credit hours: (4 (3Lectures + 2 Laboratory + 0 Tutorials).)					
2. Course type					
A.	☐University	☒ College	√ Department	☐Track	☐Others
B.	☐ Required√		Elective		
3. Level/year at which this course is offered: (Level seven / Fourth Year)					
4. Course general Description:					
Course description: an introduction to the study of entomology. Designed to acquaint students with our dependence on and interaction with insects in today's world. Biology of insects, including evolution and diversity, anatomy and physiology, behavior, ecology, insects as medical and agricultural pests, and insects as beneficial organisms. Laboratory sessions are devoted primarily to the identification of major families of insects, study exterior shape typical insect, anatomy of typical insects to get to know various internal organs, various appendages of body and its modifications and histological examination of the parts of the gastrointestinal tract.					
5. Pre-requirements for this course (if any):					
Principles of Environmental Impact Assessment – BIO 252..					
6. Co-requisites for this course (if any):					
None					
7. Course Main Objective(s):					
On successfully completing this course, students will be expected: To appreciate the value and importance of insects. To learn about the classification, biology, ecology, behaviour, and control of insects. To identify major orders and families of insects and acquire their general characteristics. To acquire practical skills in collecting, mounting, preserving insects for scientific study. To understand the general external and internal anatomy and physiology insects. • To appreciate the impacts of insects on humans and the environment					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	√	70%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning	√	30%
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	**30**
2.	**Laboratory/Studio**	**30**
3.	**Field**	**0**
4.	**Tutorial**	**0**
5.	**Others (specify)**	
Total		**60**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	To define the insect world and their position in the animal kingdom.	YES.	• Written tests. • Oral tests.	To define the insect world and their position in the animal kingdom.
1.2	To outline the reasons for the spread of insects, general characteristics and morphology of insects.	YES.	Home assignments.	To outline the reasons for the spread of insects, general characteristics and morphology of insects.

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
...				
2.0	**Skills**			
2.1	To reconstruct information about the functions of the organs and arrange them logically and sequentially.	YES	• Mental focus Problem-solving and decision-making	• Performance of written tests. Identification tests.
2.2	To classify organs of the body and the interpretation of its mechanisms	YES	• Find the collective Research. Reciprocal teaching.	Performance of written tests.
2.3	•	. YES	• research. Reciprocal teaching	Student's research and Students projects papers
3.0	**Values, autonomy, and responsibility**			
3.1	To illustrate the collaborative work and to accept criticism from others.	Teaching colleagues. Attend meetings scientific forums.	• Evaluation of colleagues. Self-report – methods.	To illustrate the collaborative work and to accept criticism from others.
3.2	To illustrate non-verbal understanding and effective cooperation and discussion.	• Interactive lectures Seminars and mental focus.	• Class participation - Assignments and worksheet.	To illustrate non-verbal understanding and effective cooperation and discussion.
3.3	To manipulate the operation and use of computers and means of modern technology.	• Default – laboratories. Illustrated presentations.	Recording student performance.	To manipulate the operation and use of computers and means of modern technology.

C. Course Content

No	List of Topics	Contact Hours
1	• Insects position in the animal kingdom, General traits of Insects	3
2	• The reasons for enormous proliferation of insects.	3
3		3

4	• The body wall: Structure and its characteristics.	3
5	• study of Metamorphosis process.	3
6	• Study parts of the body and its extensions and various modifications	3
7	study of head, antennae, and mouth parts.	3
8	• Chest study: its composition, legs, movement, Wings, aviation	3
9	and mechanical factors affecting it.	3
10	• Study abdomen: abdominal appendages and non-genital and Genital.	3
11	• Study the structure of various organs in the body of the insect	3
12	Including: Digestive system: the gut and its supplementary	3
13	• Process of food and nutrition needs.	3
14	• Circulatory system: blood vessel, blood circulation, and blood cells, blood clot.	3
15	• Respiratory system: the structure of bronchial device, operation of breathing in terrestrial, aquatic and parasitic insects. • Nervous system: its divisions, nerve conduction, the members of the Sense, mechanical and chemical receptors, members of hearing and vision. • Muscular system: muscle types, their structure. • Excretory system: excretory organs and excretory process. • Reproductive system: its structure, methods of reproduction. • A brief study of the growth after embryonic including types of Transformation. • Study the types of larvae and pupae in insects. • Revision.	3
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm 1	Around 6th -7th week	15%
2.	Midterm 2	Around11th-12thweek	15%
3.	Quizzes, Attendance, Participation, Home works.	All the semester	10%
4	Lab reports.	All the semester	5%
5	Lab Exam.	Around 15th week	15%
6	Final Exam.	Around15th-16thweek	40%
7	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Rtiplehorn, C. A .and Johnson, N.F. (2005). Borror and DeLong's Introduction to the study of insects.7th Edition. Thomson Brooks / Cole, US. Chapman. R.F. (1982). The Insects: Structure and function. Cambridge, Massachusettes, Harvard University. Press.
Supportive References	• Howard E. Evans Insect Biology: A Textbook of Entomology ISBN-13: 978-0201119817 ISBN-10: 0201119811. • P. J. Gullan The Insects: An Outline of Entomology 3rd Edition ISBN-13: 978-1405111133 ISBN-10: 1405111135, 2010. William S. Romoser The Science of Entomology 4th Edition ISBN-13: 978-0697228482 ISBN-10: 0697228487.
Electronic Materials	• Electronic biological programs. • CDs to biological and medical insects. • Electronic programs for overcoming the highlight problems of insect's anatomy. Electronic programs include the most prominent diseases
Other Learning Materials	http://www.ent.iastate.edu/LIST. http://www.chenowith.k12.or.us/TECH/subject/science/bugs.html

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	A Each classroom is equipped with PC and retro projector with a maximum of 30 students. And the laboratory room is equipped with many laboratory instruments with a maximum of 20 students.
Technology equipment (projector, smart board, software)	• A computer for display and uses of data with a slide show presentation. • High-device "projectors" Lighting. It is assumed that each student has its own computer.
Other equipment (depending on the nature of the specialty)	Specific laboratory equipment for this course including posters, models of different experimental animals especially different insects from different locations and countries, dissection instruments, light microscopes, dissection microscopes, microtome instrument, slide preparations, mixer,

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	At the end of the course each student will complete an evaluation form which it will be used by the faculty to evaluate the course feedback and the instructor.	Direct
Effectiveness of Students assessment	completes a report, including a summary of student questionnaire responses appraising progress and identifying changes that need to be made if necessary	Direct
Quality of learning resources	Follow up of faculty members by specialized committees devoid of bias and criticism.	Indirect
The extent to which CLOs have been achieved	Check a sample of marking by independent faculty member.	Indirect
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	