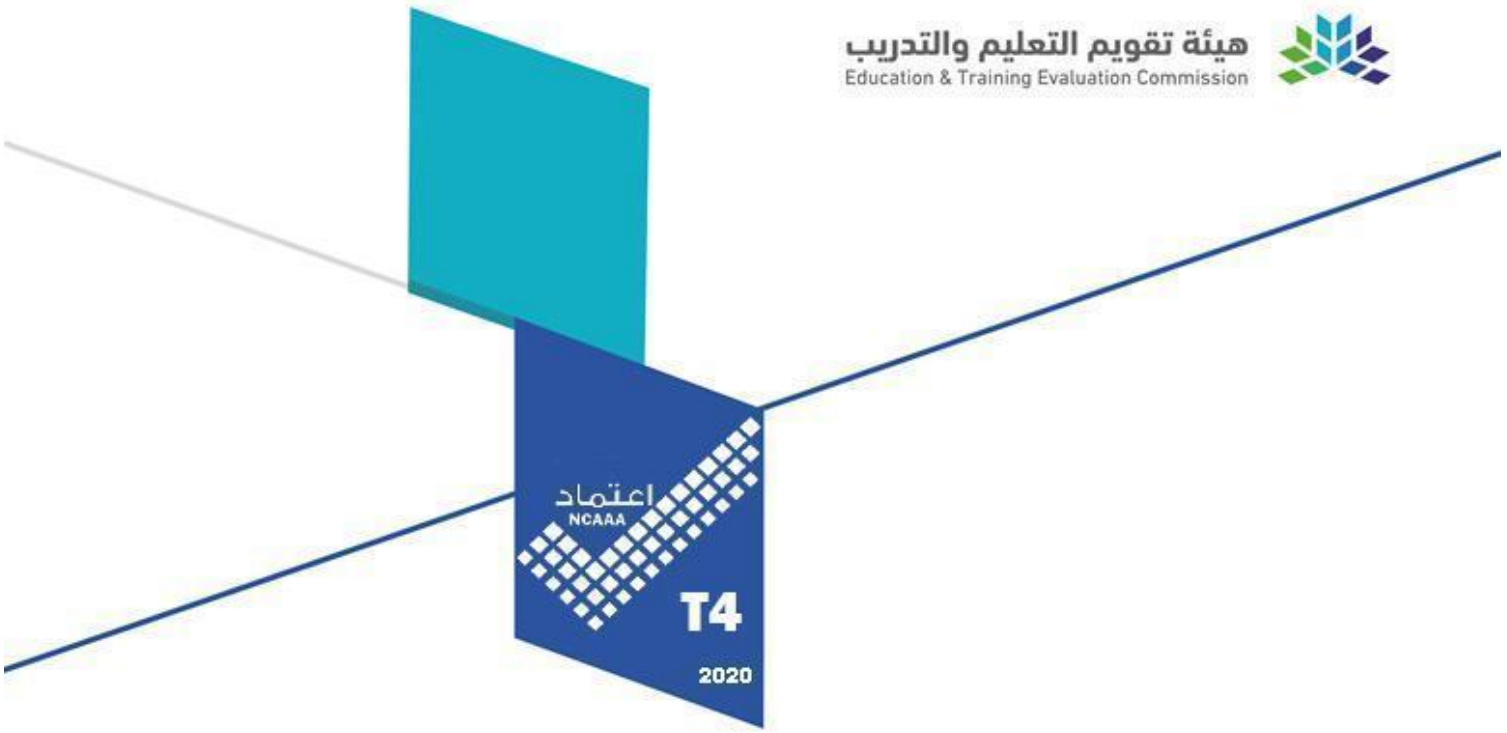
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	**General Entomology**
Course Code:	**BIO359**
Program:	**Bachelor of Science in Biology**
Department:	**Department of Biology**
College:	**Faculty of Science**
Institution:	**University of Tabuk**

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A. Course Identification

1. Credit hours:	**3 (2 Theoretical + 1 Practical) hours**
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	**Level 6/ Second semester/ Third year**
4. Pre-requisites for this course (if any)**:**	**Zoology (BIO251)**
5. Co-requisites for this course (if any)**:**	**None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	2	50%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Practical**	2	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	26
2	**Laboratory/Studio**	26
3	**Tutorial**	
4	**Others** (specify)	
	Total	**52**

B. Course Objectives and Learning Outcomes

1. Course Description

- The course includes a general introduction to Entomology, importance of insect, the reason of their success and economic importance, classification and systematic taxonomy of arthropods with emphasis on insects, the external morphology (head, thorax and abdomen appendages) and the internal anatomy of insects (digestive, respiratory, nervous, excretion and circulatory), growth and development, physiology of insects (Endocrine system), elements of insect behaviour, and their interaction with human and environment.

2. Course Main Objective

By the end of this course, the students should be able to:

- Appreciate the value and importance of insects.
- Understand the need for good management practices.
- Learn about the classification, biology, ecology, behaviour, and control of insects.
- Identify major orders and families of insects.
- Acquire skills for collecting, mounting, and preserving insects for scientific study.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Outline the basic concepts of Entomology and the external structure (morphology) of insects.	K1
1.2	Describe the major components of the internal anatomy of insects.	K1
2	**Skills :**	
2.1	Classify insect specimens to the family level.	S1
2.2	Analyze the relationship between body structures and functions.	S2
2.3	Differentiate the different types of metamorphosis in insects.	S3
3	**Values:**	
3.1	Work individual or in group	V1

C. Course Content

No	(List of Topics (Theory part	Contact Hours
1	Importance of insects (Reasons for success).	2
2	Systematics and Taxonomy (Evolution and diversity).	2
3	Systematics and Taxonomy (Class Insecta, Taxonomic position).	2
4	External features: Head (antennae).	2
5	Head (Mouth-parts).	2
6	Thorax (Legs and Wings).	2
7	Abdomen (adult and immature stages).	2
	Midterm Exam	
8	Growth and development (Metamorphosis).	2
9	Internal Anatomy (Digestive System).	2
10	Internal Anatomy (Circulatory System).	2
11	Insect Physiology (Endocrine System).	2
12	Insect Behavior (Elements of Behavior).	2
13	Insect Ecology (Trophic levels: herbivores, carnivores, decomposers).	2
	Final Exam	
Total		**26**

No	List of Topics (Laboratory part)	Contact Hours
1	Introduction and Display of Preserved Insect Specimens	2
2	Methods of Collection and Preservation of Insects	2
3	Characteristic Features of Arthropods and the Use of Identification Keys	2
4	External Morphology of Insect (Grasshopper)	2
5	Head Appendages: Antennae and Mouthparts of Insects	2
6	Thorax Appendages: Wings and Legs of Insects	2
7	Metamorphosis and Types of Larvae	2
	Mid Term Practical Exam	
8	Internal Anatomy: Digestive and Reproductive Systems of Insect	2
9	Internal Anatomy : Alimentary Tract and Nervous System	2

10	Internal Anatomy : Circulatory System	2
11	Dissection of Cockroach	2
12	Dissection of Cockroach	
13	Characters of the insect orders	2
	Final Practical Exam	
Total		**26**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Outline the basic concepts of Entomology and the external structure (morphology) of insects.	- Lecture. - Activities and homework.	- Quizzes. - Homework. - Midterm or periodic exam. - Final exams.
1.2	Describe the major components of the internal anatomy of insects.		
2.0	**Skills**		
2.1	Classify insect specimens to the family level.	- Lectures - Lab demonstrations, dissection and drawing skills.	- Assessment of lab reports and practical examinations. - Individual and group presentations. - Demonstrations through charts and posters.
2.2	Analyze the relationship between body structures and functions.		
2.3	Differentiate the different types of metamorphosis in insects.		
3.0	**Values**		
3.1	Work individual or in group.	- Individual or group presentation and working as a part of group.(Cooperative learning and Teamwork).	- Interactive discussion and participation.

2. Assessment Tasks for Students

#	*Assessment task	Week Due	Percentage of Total Assessment Score
1	Quizzes + Assignments + Class discussion	1-13	10%
2	Midterm Theoretical Exam	8	25%
3	Midterm Practical Exam	8	10%
4	Final Practical Exam	14	15%
5	Final Theoretical Exam	15	40%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

- Office hours: 8 hours / week.
- Academic Guidance for about 10 students as determined by admission and registration.
- Direct supervision of staff for lab works.
- Electronic communication through university web page and e-mail.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	- Fundamentals of entomology, Richard J. Elzinga (2004), Pearson/Prentice Hall, 2004 - 512 pages. - Vincent H.R.; Ring T.C. (2009): Encyclopedia of Insects, second edition. Academic press. ISBN-10: 0123741440.
Essential References Materials	- Adham, F. K. (2009) Medical and Veterinary Entomology. First Edition, A.R.E., ISBN: 977-17-6549-3.
Electronic Materials	- Websites on the internet those are relevant to the topics of the course.
Other Learning Materials	- Microsoft office package.

2. Facilities Required

Item	Resources
Accommodation Classrooms, laboratories, demonstration) (.rooms/labs, etc	- Lecture halls, containing white boards, and electronic monitors. The seats fit the number of students. - Laboratories equipped with three tables and water sources, microscopes and animal samples.
Technology Resources AV, data show, Smart Board, software,) (.etc	- Well-equipped lab and lecture room with computers and display screens installed with curtains on the windows are required.
Other Resources Specify, e.g. if specific laboratory) equipment is required, list requirements or (attach a list	- Prepared microscopic slides for the different types of insects and insect body parts. - Specimens for lab dissection. - Dissecting tools and dishes.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
- Effectiveness of teaching and assessment.	- Students.	Indirect - Questionnaires.
- The extent of achieving the course learning outcomes.	- Program committee. - Staff members. - Students.	Direct - Questionnaires. - Reports. - Meetings
- Quality of learning resources.	- Program leaders. - Peer Reviewer.	Direct & Indirect - Questionnaires. - Reports. - Meetings

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Biology Department Council
Reference No.	
Date	1/6/2022