هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	*Invertebrates*
Course Code:	*BIO1204*
Program:	*Bachelor of Science in Biology*
Department:	*Department of Biology*
College:	*Faculty of Science*
Institution:	*University of Tabuk*
Version:	***Course Specification Version Number***
Last Revision Date:	*September 2023*

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours:					
3 Credit (2 theoretical + 1 practical) hours					
2. Course type					
A.	☐University	☐ College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (3rd Level / 2nd year)					
4. Course general Description:					
The course includes the definition of zoology, the characteristics of the animals, the importance of animals, taxonomy of invertebrates, the different methods of feeding, locomotion, excretion and reproduction in general classes of invertebrates.					
5. Pre-requirements for this course (if any)**:**					
Fundamentals of Biology (BIO1101).					
6. Co-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
By the end of this course, the students should be able to: - Describe the major evolutionary innovations in invertebrate groups and describe the functional significance of associated morphologies and behaviors. - Describe invertebrate structure, ecology, life history and evolution. - Analyze invertebrates in laboratory and field conditions and use taxonomic keys for identification. - Describe the reproductive mode and form of development of exemplar animals in each major taxon (e.g., cleavage, gastrulation, larval stages).					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	E-learning		
3	Hybrid		

No	Mode of Instruction	Contact Hours	Percentage
	• Traditional classroom • E-learning		
4	Distance learning		
5	**Others (Lab work)**	2	50%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
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	Define animals systematically in the Animal Kingdom.	K1	-Lectures. -Class discussion. -Group discussion. -Case studies.	-Quizzes -Midterm examination. -Final examination. -Class discussion and participation. - Homework (Problem-solving).
1.2	Describe the external and internal	K1	-Lectures. -Class discussion. -Group discussion.	-Quizzes

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	structures of invertebrate animals.		-Homework assignments. -Case studies.	-Midterm examination. -Final examination. -Class discussion and participation. -Homework assignments.
2.0	**Skills**			
2.1	Draw some examples of invertebrate animals.	S1	-Lectures. -Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.2	Compare animal development during different stages of their life cycles.	S2	-Lectures. -Lab work. -Class discussion. -Group discussion. -Brainstorming.	-Quizzes -reports -Final examination. -Class discussion and participation. - Homework (Problem-solving).
2.3	Contrast taxonomically between different animals.	S3	-Lectures. -Lab work.	-Quizzes -reports

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
			-Class discussion. -Group discussion. -Brainstorming.	-Final examination. -Class discussion and participation. - Homework (Problem-solving).
3.0	**Values, autonomy, and responsibility**			
3.1	Conduct a work individual or as a member in a team.	V1	-Lab demonstration. -Class discussion. -Group discussion.	-Class discussion and participation. -Homework (Problem-solving).

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to the concept of Zoology (General characters, taxonomy and examples)	2
2.	Protozoa (Trypanosoma – Leishmania)	2
3.	Protozoa (Paramecium)	2
4.	Porifera (characters, types, structure)	2
5	Coelenterata (Characters, *Hydra*, taxonomy)	2
6.	Platyhelminthes (General characters, classification and examples (*Fasciola* and other examples) Part1	2
7.	Platyhelminthes (General characters, classification and examples (*Fasciola* and other examples) Part2	2
8.	Nematoda (Part1).	2
9.	Nematoda (Part2).	2
10.	Annelida (Part1).	2
11.	Annelida (Part2).	2
12.	Arthropoda (Part1) (General characters, Classification and examples)	2
13.	Arthropoda (Part2) (Study an insect as a Model).	2
14.	Phylum Mollusca (General features, example, classification)	2

15.	Phylum Echinodermata (General features, example, classification).	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Class Participation	During whole teaching period	5
2.	Homework (Problem-solving)	3 to 13	5
3.	Short Exams (Quizzes)	During whole teaching period	5
4.	Midterm Theoretical Examination	8-9	20
4.	Reports (For Practical)	During whole teaching period	10
5.	Final Practical Examination	15	15
6.	Final Theoretical Examination	17	40

*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	- Pechenik, Jan A. (2010): Biology of the Invertebrates, 6th Edition. McGraw-Hill, New York. USA. ISBN- 13 9780073028262. - Brooker, R. J., Widmaier, E. P., Graham, L. E. and Stiling, P. D. (2008). Biology. McGraw Hill, New York, USA.
Supportive References	- Pechenik, Jan A. (2010). Biology of the Invertebrates, 6th Edition. McGraw-Hill. ISBN- 139780073028262. - Brooker, R. J., Widmaier, E. P., Graham, L. E. and Stiling, P. D. (2008). Biology. McGraw-Hill, New York. USA.
Electronic Materials	None
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Well-equipped classrooms and laboratories that accommodate a sufficient number of students
Technology equipment (projector, smart board, software)	Multimedia projectors and smart boards.
Other equipment (depending on the nature of the specialty)	NA

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	- Students. - Faculty members.	Indirect & direct: - Questionnaires. - Meetings.
Effectiveness of Students assessment	- Quality and development committee. - Department chair.	- Course report. - Program annual report.
Quality of learning resources	- Plan and program committee. - Students. - Staff members.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
The extent to which CLOs have been achieved	- Quality and development committee. - Peer Reviewer. - Program leaders.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	PROGRAMS AND STUDY PLANS COMMITTEE
REFERENCE NO.	
DATE	SEPTEMBER 2023