هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد
NCAAA
T15

Course Specifications
(Postgraduate Degree)

Course Title:	**Classification of Biodiversity**
Course Code:	**BIOD 505**
Program:	**M.Sc. Biodiversity**
Department:	**Biology**
College:	**Science**
Institution:	**University of Tabuk**

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A. Course Identification

1. Credit hours: 3 Credit Hours (2 Theoretical + 1 Practical)
2. Course type ☒ Required ☐ Elective
3. Level/year at which this course is offered: Level 2/First year
4. Pre-requisites for this course (if any)**: BIOD 501**
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**	4	100
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

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

B. Course Objectives and Learning Outcomes

1. **Course Description:**

- This course describes the classification of biodiversity, the origin, and development of biological diversity from gene to species, native to invasive species, systematics, and classification of various organisms. The course will cover the classification of microorganisms, plant diversity, fungi, and animals (vertebrates and invertebrates). Besides, there is a specialization on parasitic life forms. It introduces a variety of species expressed at the genetic level. Also, it includes the principles of taxonomy.

2. Course Main Objective

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

- Study the principles of taxonomy for classifying living organisms.
- Discuss the universal binomial systems for classification and naming of species.
- Determine the role of Microbiological, Botanical, and Zoological congresses in the naming of plants, microbes, and animals.
- Construction and use the dichotomous keys to identifying specimens.
- Identify & classify the unknown species, from domain to species level.

3. Course Learning Outcomes

Course Learning Outcomes (CLOs)	Aligned PLOs*

Course Learning Outcomes (CLOs)		Aligned PLOs*
1	**Knowledge and Understanding:**	
1.1	Describe principles of taxonomy	K1
1.2	Outline the binomial system of naming species	K2
1.3	Name the systems of classification of living organisms	K4
1.4	List the hierarchy of taxa, from largest to smallest	K2
1...		
2	**Skills:**	
2.1	Explain the hierarchical classification system	S2
2.2	Distinguish between different phyla of living organisms using simple external recognition features.	S2
2.3	Construct a dichotomous key for the classification of unidentified species.	S3
2.4	Explain the taxonomic relations between organisms.	S4
2...		
3	**Values:**	
3.1	Apply simple identification keys to identify living organisms.	V1
3.2	Apply the classification of microorganisms, plant, and animal, specimens from domain to species.	V2
3.3	Create a dichotomous key for the identification of a species using specimens of identified species.	V2
3...		

* Program Learning Outcomes

C. Course Content

No	List of Topics	Contact Hours
1	Introduction and significance of taxonomy.	2
2	History of biodiversity classification - Gene flow between species - Origin of species & Specie biodiversity	2
3	Binomial nomencultures & construction of dichotomous key	2
4	The hierarchical classification-Taxonomists classification of species.	2
5	Natural classification system & Binomial nomenculure	2
6	Bacterial and Archaeal prokaryotic diversity & their classification.	2
7	Eukaryotic–diversity & their classification systems	2
8	Fungi, protists, and algal diversity-classification system & Identification of unknown species.	2
9	Plantae Classification	2
10	Classification & Identification of Invertebrate animal species	2
11	Classification & Identification of Vertebrate animal species	2
12	Virus & Parasitic life forms classification & Identificatin methods.	2
13	Functional diversity, Ecological diversity & Stability	2
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	Describe principles of taxonomy	- Lectures. - Group discussions. - Brainstorming. - (Videos). - Student's seminars. - Individual presentation. - Lab. demonstrations. - Field studies.	- Oral discussions. - Long and short essays. - Exams (Mid and Final) - Homework. - Quizzes. - Demonstrations. - Lab. reports. - Field reports.
1.2	Outline the binomial system of naming species		
1.3	Name the systems of classification of living organisms		
1.4	List the hierarchy of taxa, from largest to smallest		
2.0	**Skills:**		
2.1	Explain the hierarchical classification system	- Lectures. - Group discussions. - Brainstorming. - Simulation. - Research paper-based learning. - The use of interactive videos. - Lab. demonstrations. - Individual presentation. - Field studies.	- Peer assessment. - Self-evaluation. - Oral discussion. - Exams (Mid and Final) - Quizzes. - Individual and group presentations. - Lab. reports. - Field reports.
2.2	Distinguish between different phyla of living organisms using simple external recognition features.		
2.3	Construct a dichotomous key for the classification of unidentified species.		
2.4	Explain the taxonomic relations between organisms.		
3.0	**Values:**		
3.1	Apply simple identification keys to identify living organisms.	- Research activities. - Oral presentations. - An internet search, assignments, and essays. - Group discussion. - Case studies. - Individual, and group presentations.	- Student's essays and assignments. - Group reports. - Group presentations. - Discussion in lectures. - Student's written participation. - Analytical reports. - Lab. reports. - Case studies. - Posters.
3.2	Apply the classification of microorganisms, plant, and animal, specimens from domain to species.		
3.3	Create a dichotomous key for the identification of a species using specimens of identified species.		
3.4			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Activities and Short Quizzes	Distributed over 8 weeks	10
2	Pre-Final Practical Exam	8	10
3	Pre-Final Theoretical Exam	8	25
4	Final Practical Exam	15	15
	Final Theory Exam	16	40
5			
6			
7			
8			
9			
	Total		100

***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:
Eight office hours per week per faculty member.
Academic advising sessions 1hr/ week per faculty member.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	- Grandcolas, P. and Maurei, M-C. (2018). Biodiversity and Evolution. ISTE Press – Elsevier. ISBN: 9781785482779. - Frankham, R., Ballou, J. D., Briscoe, D. A. (2010). Introduction to Conservation Genetics. Second Edition. Cambridge University Press.
Essential Reference Materials	- *Journal of Biodiversity*. - *Journal of Evolution.*
Electronic Materials	- Saudi Digital Library. - UNESDOC Digital Library. - www.sciencedirect.com
Other Learning Materials	- Multimedia that is associated with the textbook and the relevant websites.

2. Educational and Research Facilities and Equipment Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration	- A sufficient number of classrooms, well equipped

Item	Resources
rooms/labs, etc.)	practical laboratories are available to accommodate 30-40 students.
Technology Resources (AV, data show, Smart Board, software, etc.)	- Data show projectors and wireless internet connection available for students and faculties. - Smart blackboard. - Computer Portable PowerPoint presentations.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	- Lecture slides. - Reference Book. - A Note Book for writing notes. - Well-equipped biology laboratory.

G. Course Quality Evaluation

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

Evaluation Areas/Issues (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 Members who constructed the program
Reference No.	Committee members – The academic year 1441/1442
Date	