Department of Environmental Science

College of Science

University of Salahaddin

Subject: Biodiversity

Course Book – (Second stage one course)

Lecturer's name MSc.Halala Rahman Qader

Academic Year: 2022 – 2023

Course Book

1. Course name	**Biodiversity (Practical)**
2. Lecturer in charge	**Dr. Shelan Mustafa Khuder**
3. Department/ College	**Environmental Sciences / Science**
4. Contact	**e-mail: Halala.qader@su.edu.krd** **Mob:07504163847**
5. Time (in hours) per	**Practical: 2 hrs per week.**

week	
6. Office hours	**3 hours per week.**
7. Course code	
8. Teacher's academic profile	In year (2007-2008) took BSc degree in biology, salahaddin university, college of education. In 2013 got master degree in plant physiology at the same university. I was starting teaching as assistant lecturer in environmental science department since 2014.
9. Keywords	

10. Course overview:

This course will cover the biodiversity domains (Protista, Animalia, and Plantae) and will also provide the specific information on each domain as well as phylum and species. In addition, it also will cover the classification of biodiversity species according to binomial system of Carl Linnaeus.

11. Course objective:

1. Provide information on the taxonomic diversity of plants, animals.
2. Understanding the binomial system of names for species.
3. Methods for detecting species presence in the field.

12. Student's obligation

A student must read the lecture hand-out before the class. Three classes in-between the semester is devote for examination, each student must prepare him/her good. Therefore, each student must have three exam marks till the end of the course.

An absence from classes should be excused according to the general regulations (i.e. sick leave) soon after coming back to college otherwise the absence is recorded as an unexcused one, and marks were subtracted from the final grade. For each class, we recommend the students to take the lecture hand-out before attending the classroom.

The questions on the test will comprise a mixture of quantitative calculations and qualitative responses that provide interpretation of the results obtained. These will

require the student to demonstrate of knowledge of ecological theory and may require some additional reading beyond the lecture material.

13. Forms of teaching

A student must read the lab lectures hand-outs before the class. In the class, the lectures are power-point present at the first couple of hours of the class, inconspicuous points are clear on whiteboard, difficult idioms and tough words are also clear for the students. Finally a slide of question mark is present in order the students to ask the teacher about inconspicuous points from each lecture. The lectures will be presented mainly in English language as well as Arabic and Kurdish language will be used if it's necessary in the Lab.

14. Assessment scheme

Grades are break down as follow:
First exam = 30 points
Second exam = 30 points

The mean of the two examinations will be taken. The final grade at the end of the year would be 35% of practical subject. While, the final examination would takes 35%. So the final grade would be passed upon the following criteria:

- Mean of two practical examinations: 25%
- Weekly quizzes: 3%
- Report 4 %
- Weekly homework 3%

15. Student learning outcome:

- Students will able to use of full range of sampling techniques currently available for invertebrate and vertebrate as well as plants in a terrestrial environment, as well as they will be able to explore techniques in the quantification of biodiversity and the measurement of abundance.
- Develop field skills such as surveying and monitoring.
- Develop identification skills such as bacteria, fungi, protozoa, animals and

plants.

16. Course Reading List and References:

1. Hunter and Gibbs (2007), *Fundamentals of Conservation Biology*.
2. Krebs, C.J. (1999). *Ecological Methodology*. (2nd Edition). Benjamin-Cummings.
3. Sinclair, A.R.; Fryxell, T. and Caughley, G. (2006) *Wildlife Ecology, Conservation and Management*. (2nd Edition). Blackwell Publishing.

17. The Topics:	**Lecturer's name**
semester Biodiversity	
18. Practical Topics (If there is any)	
Week 1: An introduction to biodiversity **Week 2: Kingdom Protista; Subkingdom protozoa** **Week 3: Kingdom Animalia; Phylum Porifera and Cnidaria** **Week 4: Phylum Platyhelminthes and Nematoda** **Week 5: Phylum Annelida** **Week 6: Phylum Mollusca** **Week 7: Phylum Arthropods (Class: Crustaceans and Class: Arachnida (Chelcirates)** **Week 8: Phylum Arthropods (Class: Insecta)** **Week 9: First exam** **Week 10: Phylum Echinodermata** **Week 11: Phylum Chordata (Class Amphibia)** **Week 12: Phylum Chordata (Class: Reptilia)** **Week 13: Phylum Chordata (Class: Aves)** **Week 14: Phylum Chordata (Class: Mammalians)** **Week 15: Kingdom Plantae; vascular plants** **Week 16: Angiosperms**	**Teaching staff:** **1. Halala Rahman**

Week 17: gymnosperms **Week 18: Second exam** **Week 19: field trip**	

19. Examinations:

1. Compositional:

Q.1: Why *Euglena* is considered as both an algae and protozoans?

2. Multiple choices:

Q.2: Choose the correct answer from the following (two incorrect answers will cancel one correct answer):

1. Bath sponge belongs to the class

a) Porifera b) Demospongia c) Hexactinellida d) Calcarea

2. Box jellies cnidarians are the members of the class

a) Hydrozoa b) Scyphozoan c) Actinozoan d) None of these

3. Kingdom Monera consist of

a) Prokaryotes b) Eukaryotes c) Archaebacteria d) None of these

4. Fungi can be distinguished from algae in fact that

a) Cell wall is cellulosoic cell wall and chlorophyll is absent b) Nucleus is present c) Mitochondria are absent d) Cell wall is chitinous and chlorophyll is absent

5. Most common method of reproduction in bacteria is

a) Binary fission b) Budding c) Multiple fission d) Sexual reproduction

3. *Differentiation and numeration:*

1. Distinguish between diploblastic & triploblastic animals?

2. Basis of classification of animal kingdom?

4. Answer the following questions:

1. What is the method of asexual reproduction in yeast?
2. Box jellies is classified under which class?
3. Name the kingdom to which bacteria belong?
4. What is the locomotary structure of Euglena?
5. Which phylum's organisms possess nematocysts?
6. Cnidarians have two basic body forms. Name them?
7. What is the name given to fungal infection?

Typical answer:

1. Because the genus ***Euglena*** is renowned for motility like protozoans as well as photosynthesis like plants (and is considered both an alga and protozoan).
2. 1. B 2. D 3. A 4. D 5. A
3. 1/

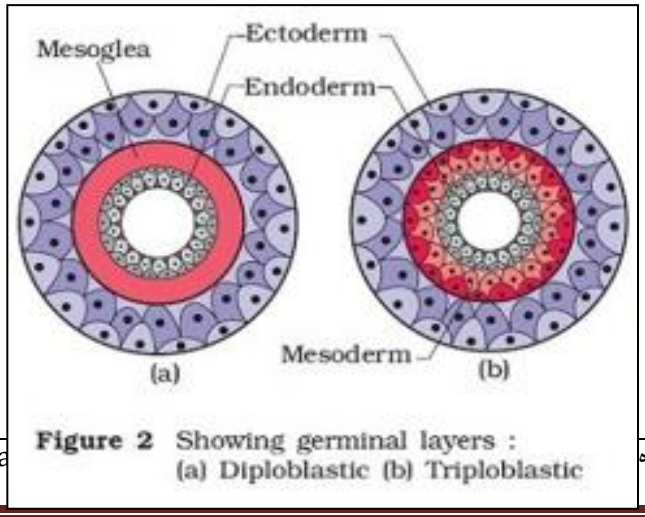

Figure 2 Showing germinal layers : (a) Diploblastic (b) Triploblastic

3. 2/ There is a difference in structure and form of different animals, there are a few fundamental characteristics that are common to various organisms. The features are:

1. Arrangement of cells,
2. Body symmetry,
3. Nature of coelom,
4. Patterns of digestive, circulatory and reproductive systems,
5. Arrangement of cells in germ layers,
6. Segmentation,
7. Notochord. These are the features that forms basis for animal classification.

4.

1. Buddying
2. Cubozoa
3. Monera
4. Flagella
5. Cnidarian
6. Polyp and Medusa
7. Mycosis

20. Extra notes:

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.