



**Department of Biology**

**College of Science**

**Salahaddin University-Erbil**

**Subject: Zoology**

**Course Book – 1<sup>st</sup> Year**

**Lecturer's name (theory): Asst. Prof. Hana Hashim Mohammad**

**Dr. Fairuz H. Abdullah**

**Lecturer's name (practical): Asst. Lecturer Shna Ibrahim Ismail**

**Academic Year: 2022-2023**

# Course Book

<b>1. Course name</b>	<b>Zoology</b>
<b>2. Lecturers in charge</b>	<b>Asst. Prof. Hana Hashim</b> <b>Dr. Fairuz H. Abdullah</b>
<b>3. Department/ College</b>	<b>Department of Biology /College of Science</b>
<b>4. Contact</b>	<b>e-mail:</b> <a href="mailto:hana.mohammad@su.edu.krd">hana.mohammad@su.edu.krd</a> <a href="mailto:fairuz.abdullah@su.edu.krd">fairuz.abdullah@su.edu.krd</a>
<b>5. Time (in hours) per week</b>	<b>Theory: 2</b>
<b>6. Office hours</b>	<b>To be Return to the schedule on the office door</b>
<b>7. Course code</b>	
<b>8. Teacher's academic profile</b>  <b>Dr. Fairuz H. Abdullah</b>	<p>I placed myself to Rizgary Teaching Hospital from 24.09.2020 to 24.09.2021. I became Lecturer on 13.01.2020. I have completed PhD. degree in Biotechnology on 05.12.2019.</p> <p>In 2015, I applied for studying PhD with IELTS band score 6.5 (Academic) and I was the only applicant with this score. I became PhD student in the speciality of Biotechnology with the rank 4<sup>th</sup> over the PhD applicants of my department. During the first semester of academic year 2016-2017, I took (Practical Biotechnology), I also taught soil microbiology second course of academic year (2016-2017) and I was teaching Practical Biotechnology during the first semester of this academic year (4<sup>th</sup> stage), and teaching practical Molecular Biology (3<sup>rd</sup> stage) the second semester along with being a PhD student. I also worked as a Member of the Examination Committee for College of Science/ Control in the academic year 2014-2015.</p> <p>I graduated from Salahaddin University in 2009</p>

<p><b>Hana Hashim</b></p>	<p>(Ranked 2<sup>nd</sup> on collage/ 1<sup>st</sup> on Biology dept.). I worked as assistant biologist during 2009-2010. I worked in the labs of General Microbiology, Environmental Microbiology as well as Microtechniques. In 2013 I got my MSc. degree in Molecular Microbiology and started working as Assistant Lecturer. At first I was teaching Entomology for one year and a half, and then I took the subject of my speciality (Practical Molecular Techniques).</p> <p>I graduate from Salahaddin University in 1992 (Ranked 5<sup>th</sup> in collage). In 1995 I finished my MSc degree and started as Assistant Lecturer Teaching Practical Parasitology, Practical Entomology, and Practical Invertebrate Biology At 2013 I got Assistant prof. degree, from that time, I am in charge of teaching Entomology theory for 4<sup>th</sup> class students at Environmental Science Department, and teaching Entomology theory for 3<sup>rd</sup> class students in Biology department, Supervising Entomology Practical Laboratory, supervising graduate students</p>
<p><b>9. Keywords</b></p>	
<p><b>10. Course objective:</b> The purpose of taking this course is to learn the basic concepts and principles of biology and zoology.</p>	
<p><b>11. Student's obligation</b> Attendance in lecture is expected. You are responsible for everything covered, mentioned, discussed and displayed in class. If you miss a class, get a classmate's notes as my notes will not be available. You cannot excel in this course if you do not come to class.</p>	
<p><b>12. Forms of teaching</b> Coursebook, PowerPoint, board and video.</p>	

Directorate of Quality Assurance and Accreditation

10 <sup>th</sup> week	<b>6- Chemical Coordination: Endocrine System</b>
11 <sup>th</sup> week	<b>Immunity</b>
12 <sup>th</sup> week	<b>Animals and Their Environments</b>
13 <sup>th</sup> week	<b>Animal Distributions</b>

## Course Book

<b>1. Course name</b>	<b>Practical Zoology</b>
<b>2. Lecturer in charge</b>	<b>Shna Ibrahim Ismail</b>
<b>3. Department/ College</b>	<b>Biology/ Science</b>
<b>4. Contact</b>	e-mail: <a href="mailto:shna.ismail@su.edu.krd">shna.ismail@su.edu.krd</a>
<b>5. Time (in hours) per week</b>	<b>2 hrs./week</b>
<b>6. Office hours</b>	<b>2 hrs./week</b>
<b>7. Course code</b>	
<b>8. Teacher's academic profile</b> <b>Shna Ibrahim Ismail</b>	<p>During 2004-2008 studied BSc in biology at college of science/university of Salahaddin and graduated by obtaining third rank among my class with average grade 81.9%.</p> <p>In March 2009 Joined academic staff as assistant biology in Salahaddin University /College of Science /Biology Department.</p> <p>In December 2012 applied for postgraduate study at the same department and got my MSc degree in medical mycology in august 2015.</p> <p>In July 2020 achieved my academic title as assistant lecturer and started teaching in my department till now.</p> <ul style="list-style-type: none"> <li>• I participated in some courses including the followings:</li> </ul>

	<ol style="list-style-type: none"> <li>1. Computer Training course in 2011 in the same university.</li> <li>2. Teaching Methods Course in 2015 in the same university.</li> </ol>
<b>9. Keywords</b>	<b>Microscope, Cell, Cell theory, Mitosis, Meiosis, Tissues, Invertebrates, Nomenclature, and Classification.</b>
<b>10. Course overview:</b> <ul style="list-style-type: none"> <li>* History of Zoology Microscope structure and its uses.</li> <li>* The importance of studying the Zoology</li> <li>* How cells divide. Differences between mitosis and meiosis.</li> <li>* Tissues and it is types.</li> <li>* Epithelial tissues definition and types.</li> <li>* Connective tissue and it is types.</li> <li>* Muscular and nervous tissues.</li> <li>* Scientific classification of living organisms.</li> <li>* Kingdom Protista.</li> <li>* Kingdom Animalia and it is phyla including Porifera, Cnidaria, Platyhelminthes, Annelida, Mollusca, Echinodermata, Arthropoda, and chordata.</li> <li>* Frog dissection</li> </ul>	
<b>11. Course objective:</b> <ul style="list-style-type: none"> <li>• The course will cover Zoology, which is the science that deals the animal life. The "Zoology" is come from "the Greek word" Zoo = animal" and "Logos = science".</li> <li>• In the Zoology laboratory, Students will see different specimens and slides to study how animals constructed and ask about their parts function.</li> <li>• The course will give students a good understanding about a number of animal characteristic topics, as: Growth, Life cycles, Forms of animals, Ecosystems of animals, Morphological appearance, Evolutionary relationships, Taxonomy of animals.</li> </ul>	
<b>12. Student's obligation</b> <ul style="list-style-type: none"> <li>▪ <b>Exam policy:</b> Student Should take at least 2 exams during the course.</li> <li>▪ <b>lab polices:</b> <ol style="list-style-type: none"> <li>1. <b>Attendance:</b> You are strongly encouraged to attend class on a regular basis, as participation is important to your understanding of the material. You are responsible for obtaining any information you miss due to absence.</li> </ol> </li> </ul>	

- 2. Lateness:** Lateness to class is disruptive.
- 3. Electronic devices:** All cell phones are to be turned off at the beginning of class and put away during the entire class.
- 4. Talking:** During class please refrain from side conversations. These can be disruptive to your fellow students and your professor
- 5. No Disrespectful to both the teacher and to your colleagues.**
- 6. Weekly Quizzes:** every lab you should take quiz
- 7. Lab coat:** you have to wear your lab coat to your protection.
- 8. Eating and drinking is prohibited inside the lab.**
- 9. You should monitor and records your practical works and results.**

### 13. Forms of teaching

- Course book
- Data show and power point.
- Scientific videos.
- Soft and hard copy lectures
- Papers for practical work and notes.
- Whiteboard.

### 14. Assessment scheme:

<b>Exam 1</b>	<b>14 marks</b>
<b>Exam 2</b>	<b>14 marks</b>
<b>Quizzes and Weekly lab activates</b>	<b>4 marks</b>
<b>Lab copy book</b>	<b>3 mark</b>
<b>Total</b>	<b>35 marks</b>

### 15. Student learning outcome:

- The importance of studying Zoology.
- Students will see different specimens and slides to study how animals constructed and ask about their parts function.
- a good understanding about a number of animal characteristic topics, as: Growth, Life cycles, Forms of animals, Ecosystems of animals, Morphological appearance, Evolutionary relationships, Taxonomy of animals.
- Dissecting of frog.
- Scientific classification of living organisms.
- A good knowledge about Kingdom Protista.
- A good knowledge about Kingdom Fungi.
- A good knowledge about Kingdom Animalia and it is phyla including Porifera, Cnidaria, Platyhelminthes, Annelida, Mollusca, Echinodermata, Arthropoda, and chordate.

### 16. Course Reading List and References:

1. Fundamentals of Zoology, 2008, by Ghose K.C. and B. Manna, New

Central Book Agency, Ltd. India.

2. Laboratory Studies in Integrated Principles of Zoology”, 1997, by C. P. Hickman; F. M. Hickman and L. Kats, 9<sup>th</sup> Edition, WCB McGraw - Hill companies, New York.
3. Animal Diversity, 2002, Cleveland P. Hickman, Jr., Larry S. Roberts, Allan Larson, 3<sup>rd</sup> edition, McGraw - Hill companies, New York. Soft-copy.
4. And any other zoology books published recently.

## 17. Practical Topics

### *✧ First Semester*

#### **Week 1:**

Course outline and hints for student’s safety and academic success.

#### **Week 2:**

Introduction to Zoology, Microscope

#### **Week 3:**

Diversity of the Cells

#### **Week 4:**

Cell division, Mitosis

#### **Week 5:**

Meiosis

#### **Week 6: 1<sup>st</sup> Exam.**

#### **Week 7:**

Tissues: Epithelial Tissue

#### **Week 8:**

Connective Tissue

#### **Week 9:**

Special Connective Tissue

#### **Week 10:**

Muscle Tissue & Nervous Tissue

#### **Week 11: 2<sup>nd</sup> Exam.**

### *✧ Second Semester*

#### **Week 1:**

Classification, Kingdom: Protista

#### **Week 2:**

Kingdom: Animalia

Subkingdom: Parazoa

Phylum: Porifera

#### **Week 3:**

Subkingdom: Metazoa

Phylum: Cnidaria (Coelentrata)



**Week 4:**

Phylum: Platyhelminthes (Flatworm)

Phylum: Nematelminthes or Aschelminthes

**Week 5:**

Phylum: Annelida (Segmented worms or Vermes)

**Week 6: 1<sup>st</sup> Exam.**

**Week 7:**

Phylum: Arthropoda

**Week 8:**

Phylum: Mollusca (Soft)

**Week 9:**

Phylum: Echinodermata (Spiny Skin)

**Week 10:**

Phylum: Chordata, part-1

**Week 11:**

Phylum: Chordata, part-2

**Week 12: 2<sup>nd</sup> Exam.**

**Week 13:**

Frog Dissection

**18. Examinations:**

**1. Compositional:** In this type of exam the questions usually starts with Explain how, What are the reasons for...?, Why...?, How....?

**2. sample identifying:**

Example: identify this test (in the picture or direct)

**3. fill the blanks:**

**Example:** In prophase centrioles begin to separate, each forming around itself a system of microtubule called ..... even longer microtubule called .....

**20. Extra notes:**

No notes

**21. Peer review**

**Peer name:**