

# *Department of*

# **Zoology**

## **Introduction**

Zoology is the scientific study of all aspects of animal life, from the microscopic single-celled protozoa to vertebrates. Zoology is a combination of various disciplines such as Genetics, Physiology, Ecology, Developmental Biology, Microbiology, Parasitology, Entomology, Freshwater Biology, Fisheries, and Wildlife etc. Zoology has significant role in human resource development, food security, environmental conservation, sustainable development and ultimately in alleviation of poverty. University of Malakand started M.Sc. Zoology two year program in 2010 and BS Zoology four year program in 2011. The Department of Zoology has been housed in the recently constructed Academic Block and is provided with will furnish classrooms and laboratories. The laboratories and Zoology museum are under the process of establishment.

## **Objective**

- To impart quality education in the fields of Zoology including wild life, fisheries, entomology, molecular biology, genetic engineering and other related fields.
- To provide knowledge of Applied Zoology that paves way for self-employment through opportunities in Aquaculture, Apiculture and Sericulture.
- To inculcate social responsibilities in the students that serve the society by not only becoming Teachers and Scientists, but also responsible citizens who bridge the gap between science and common man.

## **Marketability of the Graduates / Job Opportunities**

The Zoology Graduates can be employed in various organizations like; Federal & provincial public sector departments e.g. Education, Wild Life, Agriculture, Sericulture, Apiculture and Aquaculture, Research institutions and organizations, Private sector organizations, NGOs (local, National and international)

## **Vision**

Human society in the 21st century faces some major problems like population growth, increasing resource use, global climate change, premature extinction of plants and animals, pollution and poverty, to mention just a few. Zoology (the scientific study of animals) is an integral part of natural sciences, which is helpful in identifying, understanding and solving real world problems exemplified above. In order to face current challenges, we have to understand sustainability and stewardship as well as precautionary principle. Our vision is to produce educated people who must take care of the biosphere. Currently, we offer undergraduate programs (BS and M.Sc) in Zoology. In the near future, we are going to start graduate programs (MS/M.Phil and Ph.D) in

Zoology. In order to facilitate our students in theory and research, we are planning to establish a seminar library and strengthen our laboratories. We try to design our product according to the market forces. Our past enrollment experience shows that Department of Zoology, University of Malakand is a magnet for brilliant students and we are confident that our product will be the best available in the market.

## **Faculty Members**

### **Mr. Ikram Ilahi**

**Assistant Professor**  
**Head of the Department**

Ph.D. in Zoology in Progress (ICU Peshawar)  
M. Phil in Animal Sciences (QAU Islamabad)  
M. Sc. in Zoology (University of Peshawar)  
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### **Mr. Hazrat Ali**

**Lecturer**  
M. Phil in Environmental Chemistry (UOM)  
M.Sc. in Chemistry (University of Peshawar)  
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### **Mr. Saeed Ahmad**

**Assistant Professor**  
M. Phil (in progress) in Biotechnology (UOM)  
M. Sc. in Zoology (University of Peshawar)  
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### **Mr. Abdur Rahman**

**Lecturer**  
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### **Ms. Dil Naaz**

**Lecturer**  
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### **Dr. Wali Khan**

**Assistant Professor (on IPFP basis)**  
Ph. D in Zoology (University of Karachi)  
M. Phil in Zoology (University of Karachi)  
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**Dr. Muhammad Atta Ullah**

**Assistant Professor**

Ph. D (University of Karachi)

M.Sc. in Zoology (University of Karachi)

## **Courses Offered**

### **BS 4- Year Program in Zoology**

**Eligibility Criterion for Admission:** F.Sc (Pre-Medical) or Equivalent with at least 45 % marks in HSSC or Equivalent

### **M.Sc 2- Year Program in Zoology**

**Eligibility Criterion for Admission:** B.Sc with Zoology as one of the subject and at least 45 % marks from any HEC recognizes university

## **Description of Courses**

### **BS 4- Year Program in Zoology**

#### **SEMESTER I**

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-111	English-I ( Compulsory-I)	3
Zoo-112	Pakistan Studies ( Compulsory-II)	2
Zoo-113	Mathematics ( Compulsory-III)	3
Zoo-114	Plant Diversity ( General- I)	2 + 1
Zoo-115	General Chemistry ( General- II)	2 + 1
Zoo-116	Principles of Animal Life-I ( Foundation-I)	3 + 1
<b>Total Credit Hours</b>		<b>18</b>

#### **SEMESTER II**

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-121	English-II ( Compulsory-IV)	3
Zoo-122	Islamic Studies ( Compulsory-V)	2
Zoo-123	Plant Systematics, Anatomy & Development ( General-III)	2 + 1

Zoo-124	Organic Chemistry (General-IV)	2 + 1
Zoo-125	Principles of Animal Life-II (Foundation-II)	3 + 1
<b>Total Credit Hours</b>		<b>15</b>

### SEMESTER III

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-231	English-III (Compulsory-VI)	3
Zoo-232	Introduction to Computer (Compulsory-VII)	1+2
Zoo-233	Cell Biology, Genetics & Evolution (General-V)	2+1
Zoo-234	Environmental Chemistry ( General-VI)	2 + 1
Zoo-235	Animal Diversity-I (Foundation-III)	3 + 1
<b>Total Credit Hours</b>		<b>16</b>

### SEMESTER IV

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-241	Environmental Science (Compulsory-VIII) (Univ. Optional)	2+1
Zoo-242	Plant Physiology and Ecology ( General-VII)	2+1
Zoo-243	Animal Diversity-II (Foundation-IV)	3+1
Zoo-244	Animal Form and Function-I (Foundation-V)	3 + 1
Zoo-245	Animal Form and Function-II (Foundation-VI)	3 + 1
<b>Total Credit Hours</b>		<b>18</b>

### SEMESTER V

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-351	Research Methodology (General-VIII)	2
Zoo-352	Developmental Biology (Foundation-VII)	3+1
Zoo-353	Cell & Molecular Biology (Major-II)	3+1
Zoo-354	Animal Behavior (Major-III)	2+0
Zoo-355	Physiology (Major-IV)	3 + 1
<b>Total Credit Hours</b>		<b>16</b>

### SEMESTER VI

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-361	Biological Techniques (Foundation-VIII)	1+1
Zoo-362	Evolution and Principles of Systematics (Foundation-IX)	3+1
Zoo-363	Biochemistry (Major-V)	3+1
Zoo-364	Ecology (Major-VI)	3+1
Zoo-365	Wild Life (Major-VII)	2+0
<b>Total Credit Hours</b>		<b>16</b>

### SEMESTER VII

<b>C. Code</b>	<b>Course Title</b>	<b>CH</b>
Zoo-471	Genetics (Major-VIII)	3+1
Zoo-472	Bioinformatics (Major-IX)	1+1
Zoo-473	Elective-1	2+1
Zoo-474	Special Paper (Major-X)	3+1
Zoo-475	Biostatistics (Compulsory-IX)	2+1
Zoo-476	Research Project /Special Paper (Major-XI)	3
<b>Total Credit Hours</b>		<b>19</b>

## SEMESTER VIII

C. Code	Course Title	C H
Zoo-481	Research Project /Special Paper (Major-XII)	3
Zoo-482	Zoogeography and Paleontology (Major-XIII)	2+1
Zoo-483	Elective-II	2+1
Zoo-484	Elective-III	2+1
Zoo-485	Elective-IV	2+1
<b>Total Credit Hours</b>		<b>15</b>

**Total = 15**

**Overall Credit Hours: 33**

**Note:** Special papers/elective subjects/research project will be according to the expertise available

### M.Sc 2- Year Program in Zoology

#### M.Sc Previous Year

Paper 1 (Zoo. 111/112/113/114)	Environmental Biology, Economic Zoology, Zoogeography and Wild life of Pakistan
Paper II (Zoo. 121/122)	Palaeontology & Evolution
Paper III (Zoo. 131/132)	Genetics & Biostatistics
Paper IV (Zoo. 141/142)	Taxonomy & Animal Behavior
Paper V (Zoo. 151/152)	Cell Biology & Developmental Biology

#### M.Sc Final Year

Paper VI (Zool. 261/262)	Biochemistry & Physiology
Paper VII (Zoo.27E-A)	Entomology-A
Paper VIII (Zoo.28E-B)	Entomology-B
OR	
Paper VII (Zoo.27P-A)	Parasitology-A
Paper VIII (Zoo.28P-B)	Parasitology-B
OR	
Paper VII (Zoo.27F-A)	Fisheries-A
Paper VIII (Zoo.28F-B)	Fisheries-B
Paper IX (Zoo.291/292)	Medical Microbiology and Biotechnology

#### Thesis

**200**

**Note:** In lieu of thesis a student can opt any one of the special papers. Each of the special papers includes paper VII (A) & VIII (B) of entomology/ fisheries/ parasitology. Non research student will have to opt two of the special papers

**Special Papers (Entomology A & B, Parasitology A & B, Fisheries A& B)**

Paper VII (Zoo.27E-A)  
Paper VIII (Zoo.28E-B)

OR

Paper VII (Zoo.27P-A)  
Paper VIII (Zoo.28P-B)

OR

Paper VII (Zoo.27F-A)  
Paper VIII (Zoo.28F-B)

Entomology-A  
Entomology-B

Parasitology-A  
Parasitology-B

Fisheries-A  
Fisheries-B