



Benha University
Faculty of Science



Zoology programs



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BSc. Zoology programs



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Zoology programs

University Requirements						First Level
University Compulsory Courses: 4 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/ P	Credit Hours	Prerequisite	
Uni 100	Scientific Thinking	2	-/-	2	-	
Uni 115	English Language (1)	2	-/-		-	
Uni 151	Human Rights and Anticorruption	1	-/-	1	-	
University Requirements						
University Elective Courses: 4 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/ P	Credit Hours	Prerequisite	
Uni 105	Information Technology	2	-/-	2	-	
Uni 142	History of Science	2	-/-	2	-	
Uni 152	Healthy Nutrition	2	-/-	2	-	
Faculty Requirements						
Faculty Compulsory Courses: 88 Credit Hours						
First level						
Course Code	Course Title	Theoretical	T/ P	Credit Hours	Prerequisite	



Zoology programs

Bot 100	General Botany (1)	1	/-2	2		First level Biological Sciences
Chm 100	General Chemistry (1)	2	/-2	3		
Com 104	Introduction to Data Base	2	-/2	3		
Chm 105	General Chemistry (2)	2	-/2	3		
Zoo 101	General Zoology (1)	1	-/2	2		
Zoo 102	General Zoology (2)	2	-/2	3		
Bot 105	General Botany (2)	2	-/2	3		
Phy 103	General Physics	1	-/3	2		
Phy 104	Electricity, Magnetism and Modern Physics	1	2-Jan	2		
Mat 111	Calculus	2	2/-	3		
Ent 100	General Entomology	1	-/2	2		
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	



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Zoo 221	Invertebrates	1	-/3	2	Zoo 102
Zoo 223	Genetics	2	-/2	3	Zoo 102
Zoo 224	Chordate	2	-/3	3	Zoo 221
Zoo 343	Physiology (1)	2	-/3	3	Zoo 101
Zoo 344	Embryology and Experimental Embryology	2	-/3	3	Zoo 224
Zoo 345	Immunology	1	-/2	2	Zoo 102
Zoo 346	Physiology (2)	1	-/3	2	Zoo 343
Zoo 460	Histopathology and Histochemistry	2	-/3	3	Zoo 101
Zoo 464	Parasitology	1	-/3	2	Zoo 221
Zoo 465	Ecology and Fauna	1	-/2	2	Zoo 224
Zoo 466	Marin and Fish Biology	2	-/3	3	Zoo 102
Zoo 471	Comparative Anatomy (2)	1	-/3	2	ZOO 224
Chm 211	Aliphatic Organic Chemistry	2	-/3	3	Chm 105

Zoology and Chemistry



Zoology programs

Chm 212	Aromatic and Polynuclear Chemistry	2	-/-	2	Chm 105
Chm 222	Chemistry of Representative Elements	2	-/3	3	Chm 100
Chm 232	Electrochemistry (1)	2	-/-	2	Chm 105
Chm 241	Analytical Chemistry (1)	2	-/3	3	Chm 100
Chm 268	Organic Environmental Green Chemistry (2)	2	-/3	3	Chm 105
Chm 316	Organic Spectroscopy (1)	2	-/3	3	Chm 212
Chm 323	Chemistry of Transition Metals	2	-/-	2	Chm 222
Chm 343	Analytical Chemistry (2)	2	-/3	3	Chm 241
Chm 406	Nanochemistry and Biological Applications	2	-/3	3	Chm 222
Chm 486	Materials Science (1)	2	-/3	3	Chm 222

Faculty Elective Courses: 28 Credit Hours

Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite
Zoo 229	Aquaculture	1	-/2	2	Zoo 102

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Zoo 231	Cell Biology	1	-/2	2	Zoo 102
Zoo 232	Toxicology and Environmental Pollution	1	-/2	2	Zoo 102
Zoo 234	Introduction to Biotechnology	1	-/2	2	Zoo 102
Zoo 349	Microscopic Techniques	2	-/2	3	Zoo 102
Zoo 351	Molecular Biology	2	-/2	3	Zoo 101
Zoo 354	Animal Behavior and Evolution	1	-/2	2	Zoo 102
Zoo 356	Animal Economy	1	-/2	2	Zoo 102
Zoo 470	Eco-physiology	2	-/3	3	Zoo 346
Zoo 475	Advanced Genetics and Genetic Engineering	2	-/3	3	Zoo 223
Zoo 472	Histopathology and Tissue Culture	2	-/3	3	Zoo 465
Zoo 473	ImmunoHistochemistry	2	-/3	3	Zoo 224
Chm 213	Petroleum and Petrochemicals	2	-/-	2	Chm 105
Chm 217	Industrial Chemistry and Economic Studies	2	-/-	2	Chm 105



Zoology programs

Chm 242	Chemistry of Water Treatment (1)	2	-/-	2	Chm 241	
Chm 244	Environmental Analytical Chemistry (1)	2	-/-	2	Chm 241	
Chm 312	Therapeutic Chemistry and Vitamins	2	-/3	3	Chm 212	
Chm 322	Characterization of Inorganic Compounds	2	-/3	3	Chm 222	
Chm 323	Chemistry of Transition Metals	2	-/-	2	Chm 222	
Chm 335	Electrochemical Instrumental Analysis	2	-/-	2	Chm 241	
Chm 400	Nano-Chemistry and Applications	2	-/-	2	Chm 222	
Chm 410	Chemo-therapy and Hetero-organic Chemistry	2	-/-	2	Chm 316	
Chm 421	Nuclear and Radiation Chemistry	2	-/-	2	Chm 324	
Chm 439	Basis of Quantum and Statistical Dynamics Chemistry	2	-/-	2	Chm 222	
Faculty Free Elective Courses: 6 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Zoology
Com 223	Logic Design (1)	1	2/-	2	-	



Zoology programs

Bph 280	Basis of Biophysics	1	-/2	2	-	
Geo 339	Minerals and Rocks	1	-/2	2	-	
Mic 359	General Microbiology	1	-/2	2	-	
Geo 409	Paleontology	1	-/2	2	-	
Com 479	Computer Programming	1	-/2	2	-	
Faculty Graduation requirements: 6 Credit Hours						
Zoo 300	Applied and Field Training	-	-/-	3	--	
Zoo 442	Research and Essay	3	-/-	3	--	
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Zoo 221	Invertebrate	1	-/2	2	Zoo 101	Zoology and
Zoo 223	Genetics	2	-/2	3	Zoo 101	
Zoo 224	Chordates	2	-/2	3	Zoo 101	
Zoo 231	Cell Biology	1	-/2	2	Zoo 101	
Zoo 241	Introduction to Ecology	1	-/2	2	Zoo 101	



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Eco 245	Limnology	2	-/2	3	Zoo 101
Eco 246	Zoogeography	2	-	2	Zoo 101
Eco 290	Biodiversity	1	-/2	2	Zoo 101
Eco 292	Terrestrial and Desert Ecology	1	-/2	2	Zoo 241
Zoo 298	Fish Biology	1	-/2	2	-
Eco 321	(G I S) and Remote Sensing	1	-/3	2	Zoo 241
Zoo 343	Physiology	2	-/2	3	Zoo 101
Zoo 344	Embryology and Experimental Embryology	2	-/2	3	Zoo 343
Zoo 345	Immunology	1	-/2	2	Zoo 101
Zoo 348	Cell and Tissue Culture	2	-/2	3	Zoo 231
Zoo 349	Microscopic Technique	1	-/2	2	Zoo 101
Eco 395	Pollution Climate Change	2	-	2	Zoo 241
Eco 422	National Parks	2-	-	2	Zoo 241
Zoo 460	Histopathology and Histochemistry	2	-/2	3	Zoo 101
Zoo 463	Comparative Anatomy (1)	2	-/2	3	Zoo 101
Zoo 464	Parasitology	1	-/3	2	Zoo 221



Zoology programs

Zoo 469	Molecular Anatomy	1	-/2	2	Zoo 231		
Zoo 470	Eco-physiology	2	-/2	3	Zoo 343		
Zoo 484	Evolution and Co-evolution	2	-	2	-		
Zoo 487	Marine Biology	2	-/2	3	Zoo 101		
Faculty Elective Courses: 28 Credit Hours							
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Zoology and Ecology	
Eco 205	Energy and Sustainable Energy	2	-	2	Zoo 101		
Zoo 210	Hematology	1	-/2	2	Zoo 102		
Zoo 229	Aquaculture	1	-/2	2	Zoo 101		
Zoo 234	Introduction of Biotechnology	2	-	2	Zoo 101		
Ent 260	Entomology	1	-/2	2	Zoo 101		
Eco 261	Sustainable Development	2	-	2	Zoo 101		
Zoo 345	Immunology	1	-/2	2	Zoo 102		
Zoo 351	Molecular Biology	1	-/2	2	Zoo 101		
Zoo 354	Animal Behavior and Evolution	1	-/2	2	Zoo 101		
Eco 355	Marine Biotechnology	2	-	2	-		



Zoology programs

Zoo 356	Animal Economy	1	-/2	2	Zoo 102	
Eco 382	Eco-city and Green Architecture	2	-	2	-	
Eco 383	Environmental Impact Assessment (EIA)	2	-	2	-	
Zoo 385	Comparative Physiology	1	-/2	2	Zoo 224	
BTC 475	Cancer Biology	2	-/2	3	Zoo 231	
Zoo 477	Enzymes	2	-/3	3	Zoo 343	
Eco 485	Molecular Ecology	2	-	2	Zoo 343	
Mic 488	Serums and Vaccines	2	-	2	Zoo 231	
Zoo 494	Frozen Zoo	2	-	2	Zoo 349	
Zoo 496	Adaptive Physiology	1	-/2	2	Zoo 343	
Faculty Free Elective Courses: 6 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Com 223	Logic Design (1)	1	2/-	2	-	
Geo 236	Rock Forming Minerals of Hard Rocks	1	-/3	2	-	
Chm 240	Organic Chemistry	1	-/2	2	-	
Ent 258	Medical Entomology	1	-/2	2	-	



Zoology programs

Bph 280	Basis of Biophysics	1	-/2	2	-	
Bot 353	Food Science	2	-	2	-	
Faculty Graduation requirements: 6 Credit Hours						
Zoo 300	Applied and Field Training	-	-/-	3	-	
Zoo 442	Research and Essay	3	-/-	3	-	
Faculty Compulsory Courses: 60 Credit Hours						
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	
Zoo 223	Genetics	2	-/2	3	Zoo 101	Biotechnology
Mic 224	Microbiology and Introduction to Biotechnology	2	-/2	3	Bot 100	
BTC 226	Biotechnology	2	-/2	3	Zoo 101	
Zoo 227	Vertebrates	2	-/2	3	Zoo 101	
BCh 228	Biochemistry	1	-/2	2	Chm 105	
Zoo 231	Cell Biology	1	-/2	2	Zoo 101	
BTC 233	Environmental Biotechnology	2	-/2	3	Zoo 101	
BTC 235	Nanotechnology	2	-/3	3	-	
Zoo 345	Immunology	1	-/2	2	Zoo 101	



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Zoo 348	Cell and Tissue Culture	2	-/2	3	Zoo 231
Bot 349	Bioremediation	2	-/2	3	Mic 224
Zoo 351	Molecular Biology	2	-/-	2	Zoo 101
Bio 355	Biotechnology Management	1	-/-	1	-
Eco 355	Marine Biotechnology	2	-/-	2	-
BTC 357	Proteomics	2	-/2	3	Zoo 223
Zoo 461	Bioinformatics	2	-/2	3	Zoo 101
Zoo 462	Genomic Analysis	2	-/2	3	Zoo 223
Zoo 467	Instrumentation Technology	2	-/-	2	-
Zoo 468	Epigenetics	2	-/2	3	Zoo 223
BTC 471	Advanced Genetic and Protein Engineering	2	-/3	3	Zoo 223
BTC 475	Cancer Biology	2	-/2	3	Zoo 231
Zoo 485	Molecular Ecology	2	-/-	2	Zoo 351
Zoo 497	Stem Cell Biology	2	-/2	3	Zoo 231
Faculty Elective Courses: 28 Credit Hours					
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite



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Mat 204	Numerical Analysis (1)	1	2/-	2	Mat 101
Com 220	Data Structure	2	-/2	3	Com 102
Com 224	Operating Systems	1	2/-	2	-
Zoo 230	Toxicology and Animal Toxins	2	-/3	3	Zoo 102
Chm 331	Applied Electrochemistry	2	-/3	3	Chm 105
Zoo 242	Developmental Biology	2	-/2	3	Zoo 101
Com 323	Database Management Systems	2	2/-	3	Com 102
Zoo 343	Physiology (1)	2	-/2	3	Zoo 101
Eco 245	Limnology	2	-/2	3	Zoo 101
Zoo 346	Physiology (2)	2	-/2	3	Zoo 343
Zoo 350	Neuroendocrinology	1	-/2	2	Zoo 343
Bch 352	Clinical Biochemistry	2	-/2	3	Bch 228
Zoo 352	Immunotherapy	2	-/-	2	Zoo 345
Zoo 362	Genomics	2	-/2	3	Zoo 223
Eco 366	Pollution and Climate Change	2	-/-	2	Zoo 101
Zoo 460	Histopathology and Histochemistry	2	-/2	3	Zoo 101

Biotechnology



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Zoo 466	Marine and Fish Biology	2	-/3	3	Zoo 102		
Zoo 470	Eco-physiology	2	-/3	3	Zoo 346		
Zoo 472	Histopathology and Tissue Culture	2	-/3	3	Zoo 465		
Zoo 479	Ontogeny and Phylogeny of Immune System	2	-/2	3	Zoo 345		
Faculty Free Elective Courses: 6 Credit Hours							
Course Code	Course Title	Theoretical	T / P	Credit Hours	Prerequisite	Biotechnology	
Com 223	Logic Design (1)	1	2/-	2	-		
Geo 236	Rock Forming Minerals of Hard Rocks	1	-/3	2	-		
Chm 240	Organic Chemistry	1	-/2	2	-		
Ent 258	Medical Entomology	1	-/2	2	-		
Bph 280	Basis of Biophysics	1	-/2	2	-		
Bot 353	Food Science	2	-/-	2	-		
Faculty Graduation requirements: 6 Credit Hours							
Zoo 300	Applied and Field Training	-	-/-	3	-		
Zoo 442	Research and Essay	3	-/-	3	-		