SYLLABUS

Course Code	Course Num.	Course Name	Credit Hours	Lec.	Lab.	Tut.	Private study	Pre-requisites	Course Level	Teaching Language
BIO	111	Animal Taxonomy	4	3	2	0	4-6	-	2	English

A. Course Description

Course description: this course has titles which will introduce the basic concepts for all courses of biology in all next educational levels. So, this course shows definition, basic concept and importance of systematics and taxonomy concepts of different conventional and newer aspects in biosystematics, classification of animal kingdom-major and minor phyla and illustrates the evolutionary relationships between different organisms**.**

B. Course Outcomes

At the end of this course the student is able to:

1. To identify basic concepts and principles of taxonomy of Zoology.
2. To know that taxonomy of zoology provides a systematic investigation from the major protista and animal groups.
3. To discuss Definition, basic concept and importance of Systematics and Taxonomy Concepts.
4. To illustrate the evolutionary relationships between different organisms.
5. To know Classification of Animal Kingdom-Major and Minor Phyla.
6. To identify general characters and life cycle of each animal's group.
7. To know The importance of this systematics

C. References:

Required Textbook

- Hickman C. P. Jr. et al., Integrated Principles of Zoology. 16th ed.(2013). ISBN- 13: 978-0073524214.
- Paul Waldau. Animal Studies: An Introduction 1st Edition (2013). ISBN-13: 978-0199827039.
- Barnes, R.D. Invertebrate Zoology (1982) VI Edition. Holt Saunders International Edition.
- Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. & J.I., Spicer (2002) The Invertebrates:A New Synthesis. III Edition. Blackwell Science.
- Barrington, E.J.W. (1979) Invertebrate Structure and Functions. II Edition. E.L.B.S. and Nelson.

Other references:

- Campbell, N.A. and Reece, J. B. (2008) Biology 8th edition, Pearson Benjamin Cummings, San Francisco.
- Griffiths, A.J.F et al (2008) Introduction to Genetic Analysis, 9th edition, W.H. Freeman & Co. NY
- Raven, P.H et al (2006) Biology 7th edition Tata mcgrawhill Publications, New Delhi.

Course Website: Google Classroom Webpage: http://www.imamm.org/

D. Topics Outline

D1. Lectures Topics

- Definition, basic concept and importance of Systematics and Taxonomy Concepts of different conventional and newer aspects in biosystematics Chemotaxonomy, Cytotaxonomy.
- Taxonomic procedures: - taxonomic collections, preservation, method of identification, taxonomic keys- different types of keys. concepts of taxonomic terms and importance of classification Process of typification and different Zoological types and International Code of Zoological Nomenclature (ICZN): Basic Concepts binominal nomenclature and trinomial nomenclature
- Classification of Animal Kingdom-Major and Minor Phyla
- **PROTOZOA:** general characters and classification up to orders with examples. Nutrition, locomotion and reproduction in Protozoa.
- **PORIFERA:** general characters and classification up to orders with examples canal system of in porifera.
- **COELENTERATA:** general characters and classification up to orders with examples. polymorphism in syphonophora, coral and coral reef. formation.
- **PLATYHELMINTHES:** general characters and classification up to orders with examples,Morphology and Life History of Fasciola.
- **ASCHELMINTHES:** general characters and classification up to orders with examples. morphology and life history of ascaris. life cycles and pathogenicity of parasites of man (plasmodium, taenia, ancylostoma,), parasitic adaptation in helminthes.
- **ANNELIDA:** general characters and classification up to orders with examples. coelom, coelomoduct and nephridia of annelida, structure and significance of Trochophore larva
- **ARTHROPODA:** general characters and classification up to orders with examples. Appendages and digestive system of prawn. significance of peripatus in evolution.

- **MOLLUSCA:** general character and classification up to orders with examples. digestive and nervous system of Pila, torsion in gastropoda.
- **ECHINODERMATA:** general characters and classification up to orders with examples, watervascular system in echinodermata, larvae of Echinodermata.
- **CHORDATA:** General characters, outline of classification and plan of body organization in chordates
- **PROTOCHORDATES:** general characters, classification of protochordata up to suborders with examples.
- **HEMICHORDATA:** morphology and affinities of Balanoglossus.
- **UROCHORDATA:** structure and retrogressive metamorphosis in Urochordata
- **CEPHALOCHORDATA**: structure and affinities of Amphioxus.
- **AGNATHOSTOMATA:** distinctive characters and classification, Ammocoete larva – its importance in evolution, differences between Lamprey and Hagfish
- **FISHES:** circulatory system, nervous system and sense organ of Scoliodon. accessory respiratory organ and swim bladder in fish, migration of fishes.
- **AMPHIBIA:** general characters, classification up to orders with examples,respiration in amphibia, parental care in amphibian.
- **REPTILIA:** general characters classification up to order with examples. anatomical peculiarities and affinities of Sphenodon, biting mechanism of poisonous snake.
- **AVES:** Distinctive characters and classification up to orders with examples. Air sacs-significance and importance, Flight and perching mechanism in birds, Migration of bird.
- **MAMMALIA:** distinctive characters and classification up to orders with examples. General organization and affinities of Monotremata and Marsupialia. Receptor and sense organs in Mammals. Dentition in Mammals.
- *Revision*

- **D2. Laboratories Topics**

- **Dissection of the following invertebrate systems- (only one):** Leech (i) urogenital system (ii) nervous system Prawn (i) digestive system (ii) nervous system Cockroach (i) nervous system (ii) reproductive system (male and female.

- **Mounting:** Temporary:- setae of earthworm, statocyst of prawn, salivary apparatus of cockroach, radula of pila Permnent :- euglena, hydra, obelia colony, crustacean larvae.

- **Indentification of prepared slides:** Polystomella, sponge spicules, T.S. of asccaris, miracidium, sporocyst and cercaria larvae of liver fluke, Of leech (through crop region), mouth parts of mosquito (culex), glochidium and veliger larvae of mollusca T.S of arm of Starfish, larvae of Echinodermata.

- Flatworms exercises, molluscs.
- Nematodes, rotifers.
- Annelids, myriapods, exercise, chelicerates.
- Crustaceans, insects.
- Echinoderms, protochordates.
- Vertebrate skeletal diversity.
- Vertebrate tissues exercise, begin skinning fetal rat.
- **Fetal rat:** finish skinning, identify exercise, muscles.
- **Fetal pig:** digestive, circulatory, exercises, urogenital systems.
- General revision

E. Office Hours

Office hours give students the opportunity to ask in-depth questions and to explore points of confusion or interest that cannot be fully addressed in class.

F. Exams & Grading System

The semi-official dates of the exams for this course are:

- **Midterm 1:** 6th or 7th week.
- **Midterm 2:** 11th or 12th week.
- **Quizzes & Homework:** During the semester.
- **Lab exam:** 15th week.
- **Final Exam:** 16th week.

Your course grade will be based on your semester work as follows:

Midterm 1: 15 %	**Midterm 2:** 15 %	**Lab exam:** 20 %	**Final Exam:** 40 %
Quizzes, Homework, Attendance & Participation: 10 %			

The grading distribution:

A+	A	B+	B	C+	C	D+	D	F
[95, 100]	[90, 95)	[85, 90)	[80, 85)	[75, 80)	[70, 75)	[65, 70)	[60, 65)	[0, 60)

G. Student Workload

#	Teaching/Learning activities	Contact hours	Frequency	Total contact Hours	Self-study hours	Total self-study hours	Student learning time
5	Lecture	3	15	45	2	30	65
2	Tutorial	0	0	0	0	0	0
0	Lab\practical	2	15	30	1	15	45
5	Homework	0	4	0	2	8	8
4	Quiz	0.5	2	1	1	2	3
6	Midterm	1.5	2	3	5	10	13
7	Final Exam	2	1	2	12	12	14
Total				**81**		**77**	**158**

The independent self-study is approximately 5 hours per week.

H. Student Attendance/Absence

Only three situations will be considered as possible excused absences:

- Occurrence of a birth or death in the immediate family will be excused. ("Immediate family" is defined by the University as spouse, grandparents, parents, brother, or sister).
- Severe illness in which a student is under the care of a doctor and physically unable to attend class will be excused. Students are not excused for a doctor's appointment. Do not make appointments that conflict with rehearsals. Notes from the University Health Center will be accepted.

Executive Rules for Study Regulations and Exams

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