

**Institute of Zoology
Faculty of Life Sciences
University of the Punjab, Lahore
Course Outline**



Programme	BS Zoology	Course Code	ZOOL-407	Credit Hours	1
Course Title	Lab. Principles of Paleontology				
Course Introduction					
The course will include an overview of important fossil groups with hands-on experience and a field trip. The laboratory course is designed to introduce students to some of the common fossils that as a paleontologist you could encounter.					
Learning Outcomes					
On the completion of the course, the students will:					
<ol style="list-style-type: none"> 1. Acquire theoretical knowledge about prehistoric life at different stages of Geological Time Scale. 2. Compare different osteology of vertebrate groups. 3. Collect the fossils from field. 4. Evaluate the paleoecology and paleoenvironment associated with different faunal elements. 					
Course Content					Assignments/Readings
Week 1	Unit-I 1.1 Fossils 1.1.1 Unaltered Fossils				Types of Fossils
Week 2	Unit-II 2.1 Fossils 2.1.1 Altered Fossils				Petrification
Week 3	Unit-III 3.1 Fossils 3.1.1 Trace Fossils				Mold, Cast, Coprolites, Imprints
Week 4	Unit-IV 4.1 Fossils 4.1.1 Invertebrate Fossils				Invertebrate Phyla
Week 5	Unit-V 5.1 Fossils 5.1.1 Vertebrate Fossils				Vertebrate Phyla
Week 6	Unit-VI 6.1 Rocks 6.1.1 Minerals				Feldspar, Quartz, Mica
Week 7	Unit-VII 7.1 Rocks 7.1.1 Clastic Sedimentary Rocks				Sandstone, Claystone, Mudstone etc.
Week 8	Unit-VIII 8.1 Rocks 8.1.1 Non-Clastic Sedimentary Rocks				Salt, Gypsum, Coal, Limestone etc.
Week 9	Unit-IX 9.1 Rocks 9.1.1 Igneous Rocks				Plutonic and Volcanic rocks
Week 10	Unit-X 10.1 Rocks 10.1.1 Metamorphic Rocks				Foliated and Non foliated rocks

Week 11	Unit-XI 11.1 Fossil Identification 11.1.1 Bovid Upper Molar	Vertebrate fossils	
Week 12	Unit-XII 12.1 Fossil Identification 12.1.1 Bovid Lower Molar	Vertebrate fossils	
Week 13	Unit-XIII 13.1 Fossil Identification 13.1.1 Horse Upper Molar	Vertebrate fossils	
Week 14	Unit-XIV 14.1 Fossil Identification 14.1.1 Horse Lower Molar	Vertebrate fossils	
Week 15	Unit-XV 15.1 Fossil Identification 15.1.1 Suid Upper Molar	Vertebrate fossils	
Week 16	Unit-XVI 16.1 Fossil Identification 16.1.1 Suid Lower Molar	Vertebrate fossils	
Textbooks and Reading Material			
<ol style="list-style-type: none"> 1. Young J.Z., 2001. (3rd edition). Life of vertebrates. London, Oxford Univ. Press. 2. Dunbar C.O., 1960. Historical Geology. John Willey and Sons Inc. New York. 3. Brouwer, A., 1977. General Palaeontology, Oliver and Boyed, London. 4. Gilbert, Colbert, E.H., 1980. Evolution of vertebrates, John Willey and Sons Inc. New York. 5. Moore, R.C. Lalicker, G.C., Fisher, A.G., 2004. Invertebrate Fossils. McGraw-Hill, New York. 6. Steven M. Stanley, 2014. Earth system History. 3rd addition. 7. Michael Foote and Arnold I. Miller, 2007. Principles of Palaeontology (3rd Ed.) Freeman & Company. 8. Michel J. Benton, 2015. When Life Nearly Died: The Greatest Mass Extinction of All Time. Thames & Hudson. 9. Akbar Khan, M., et al., 2023. Laboratory Manual Principles of Palaeontology and Zoogeography. Azeem Publishers, 22 Urdu bazar Lahore, Pakistan. 			
Teaching Learning Strategies			
Class lectures, Class discussions, Group work, Documentary			
Assignments: Types and Number with Calendar			
Assignments as mentioned in the above column.			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.