

Introduction

This course is to study the description and distribution of fossil invertebrate groups. Most of the details we know about Earth history come from sedimentary rocks and the fossils within them. Survey the morphology, palaeoecology, evolution, and geologic history of the invertebrate phyla.

Course Objectives

The purpose of this course is to introduce to the most important groups of organisms in the invertebrate fossil record.

Course Contents:

Introduction of invertebrate palaeontology. Various types of fossilized invertebrate shells: Calcitic shells, Silica shells, Phosphatic shells. Fossil obliteration. Factors for invertebrates in marine environments: Temperature, pressure, salinity. Stratification: lithostratigraphy, biostratigraphy, chronostratigraphy. Common sedimentary environments: stream, wind, deserts, coastal environment, glaciers. A detailed study of the classification, structure, affinities, distribution and biostratigraphical importance of Protozoa (Foraminifera and Radiolaria), Cnidaria (Cora reefs), Bryozoa, Brachiopoda, Mollusca, Arthropoda (trilobites).

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Books recommended

1. Euan Clarkson, 1998. Invertebrate Palaeontology and Evolution. 4th ed. Black Well publishing (The University of Edinburgh).
2. Boardman, R.S., Cheetham, A.H., and Rowell, 1987. Fossil Invertebrates. Blackwell Scientific, Boston, USA.
3. Clarkson, E.N.K., 1998. Invertebrate Palaeontology and Evolution. 4th ed. Blackwell, New York, USA.
4. Moore R.C., Lab Cker, C.G. and Fisher, A.G., 1952. Invertebrate Fossils. McGraw Hill.
5. David Nash, 2007. Geochemical Sediments and Landscapes. Black Well publishing (University of Brighton) and Sue McLaren (University of Leicester).
6. Gary Nichols, 1998. Sedimentology and Stratigraphy. Black Well publishing.

UZO-526

Invertebrate Palaeontology (Lab.)

Cr: 1

Introduction:

The course introduces the stratigraphic history of each group, its range of habitats, functional morphology, paleoecological and paleoenvironmental significance, and basic patterns of diversification and extinction.

Course Objectives:

Lab exercises will focus on the recognition of basic morphological features of fossils and identification of important taxa.

Course Contents:

Invertebrate fossil collection; preparation and identification. A general survey of fossil invertebrates in various museums of Pakistan. Classification and geological distribution of the following invertebrates: *Planispiral*, *Cornuspira* (foraminifers), *Cenosphaera*, *Heliosphaera*, *Theodiscus* (radiolarians), *Seapens*, *Hexagonaria* (cniderians), *Prasopora*, *Clathropora* (bryozoans), *Leptobolus*, *Hesperorthis* (brachiopods), *Plethospira*, *Dentalium*, *Cypraea* (Mollusca), *Canadaspis*, *Sanctacaris* (trilobites). Studies of sedimentation and stratification in the field.

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