

Course Outline

Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NGLC532	Micropaleontology and Vertebrate Paleontology Practical	0	0	2	1

Course Objective

The primary objective of the course is to introduce students to benthic foraminifera (up to generic level) and planktic foraminifera (up to species level), a few aspects of the population count of foraminifera. Also, students will be introduced to available molar teeth fossils of vertebrates.

Learning Outcomes

Upon completion of the course, students will be able to:

- Identify benthic (with their depth, food and oxygen preference) and planktic groups for biostratigraphy.
- Apply census count for understanding paleo-events
- Identify teeth with food patterns and animal forms.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Introduction to stereo-zoom binocular microscopes, comparison with other kinds of microscopes, different tools used in foraminiferal separation.	2	Stereo-zoom microscope, its advantages and disadvantages with others. Idea on tools used for foraminifera separation
2	Morphology, identification, systematics and ecological preferences of some shallow water depth (shelf) preferring calcitic benthic foraminifera	4	Knowledge on shallow water benthic foraminifera. Help in understanding depositional setting.
3	Morphology, identification, systematics and ecological preferences of some intermediate water depth (bathyal) preferring calcitic benthic foraminifera	4	Knowledge on intermediate water benthic foraminifera. Help in understanding depositional setting.
4	Morphology, identification, systematics and ecological preferences of some intermediate water depth (abyssal) preferring calcitic benthic foraminifera	2	Knowledge on deep-water water benthic foraminifera. Help in understanding depositional setting.
5	Morphology, identification, systematics and ecological preferences of some agglutinated benthic foraminifera	2	Knowledge on agglutinated benthic foraminifera.
6	Morphology, identification, systematics and ecological preferences of some Miliolids (oxygen preferring).	2	Knowledge on oxic environment preferring plankticforaminifera. Help in understanding depositional setting.
8	Morphology, identification, systematics and ecological preferences of some Oxygen Minimum Zone preferring benthic foraminifera.	2	Knowledge on dysoxic to suboxic environment preferring planktic foraminifera. Help in understanding depositional setting.
9	Morphology, identification, systematics and ecological preferences of some tropical planktic foraminifera.	2	Knowledge on latitudinally biased planktic foraminifera. Help in understanding SST, Salinity and productivity.
10	Morphology, identification, systematics and ecological preferences of some sub-tropical planktic foraminifera.	2	Knowledge on latitudinally biased planktic foraminifera. Help in understanding SST, Salinity and productivity.
11	Morphology, identification, systematics and ecological preferences of some polar planktic foraminifera.	2	Knowledge on latitudinally biased planktic foraminifera. Help in understanding SST, Salinity and productivity.
12	Study on some index foraminifera	2	Will help in biostratigraphy
13	Study of some molar teeth of mammals	2	Will deliver knowledge on evolution and biostratigraphy.
Total		28	

Text Books:

1. Holbourn, A., Henderson, A. S., and MacLeod, N., (2013)-Atlas of Benthic Foraminifera.-Wiley-Blackwell, pp. 642.
2. Loeblich, A. R., and Tappan, H., 1988. Foraminiferal genera and their classification (Vol. 1 and 2). Van Nostrand Reinhold, USA, pp. 970 and plates 847.

Reference Books:

1. Practical handbooks as available in the laboratory.