

**AG-310      Micropaleontology****Credit Hours 2+1****Prerequisite:** AG-102**Learning Outcomes**

This course is designed to understand the micro-fossils found in geological formations and Tertiary biostratigraphy rock units in Pakistan.

**Course Contents**

Introduction to foraminifera, Bryozoa, ostracoda, Conodonts, Algae, Pollen and Spores, organic walled microplanktons and nano-fossils. Principles of bio-stratigraphy and bio-stratigraphic zones. Bio-stratigraphic techniques and procedures. Tertiary biostratigraphy with special reference to Pakistan.

**Lab.**

Basic Micro-Paleontological and bio-stratigraphic techniques. Morphological and taxonomic studies of selected microfossils.

**TEACHING – LEARNING STRATEGIES**

- Lecture based examination
- Presentation/seminars
- Class discussion
- Quizzes

**ASSIGNMENTS – TYPE AND NUMBER WITH CALENDAR**

It is continuous assessment. The weightage of Assignments will be 25% before and after midterm assessment. It includes:

- classroom participation,
- attendance, assignments and presentation,
- homework
- attitude and behavior,
- hands-on-activities,
- short tests, quizzes etc.

**ASSESSMENT AND EXAMINATIONS**

Sr. No.	Elements	Weightage	Details
1.	Mid Term Assessment	35%	It takes place at the mid-point of the semester
2.	Formative Assessment	25%	It is continuous assessment. It includes: classroom participation, attendance, assignments and presentation, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.
3.	Final Assessment	40%	It takes place 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.

## **Books Recommended**

1. Microfossils by Brasier, M.D., 1980, Allen and Unwin.
2. Invertebrate Fossils by Fischer, G.A. and Moore, R.C., latest Ed., McGraw Hill.
3. Introduction to marine Micropaleontology by Haq & Boersma, 1980, Elsevier.
4. Paleontology by Tucker, V.C.T. and Noeld, E.W., 1985, Pergaman Press.
5. Planton stratigraphy by Balli & Saunders, 1986, Oxford University Press.