

| <b>Course code:<br/>464VAC5</b>   | <b>Course – V – MICROPALAEONTOLOGY</b>  | <b>Credits: -</b> | <b>Hours: 10</b> |
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| <b>Objectives</b>   | <ul style="list-style-type: none"> <li>➤ To learn the micropalaeontology and its methods.</li> <li>➤ To learn about foraminifera.</li> <li>➤ To understand the palynological techniques.</li> </ul>   |                   |                  |
| <b>Unit: I</b>  | Introduction to micropaleontology - Surface and sub-surface sampling methods, processing of samples, preparation of thin sections of larger foraminifera, Sampling techniques for ecological studies living microforms. Scanning Electron Microscope photographic techniques.   |                   |                  |
| <b>Unit: II</b>   | Test morphology, wall structure, dimorphism, classification, evolution and ecology/paleoecology of Foraminifera, Biometrics of important larger foraminifera, Stratigraphy of foraminifera with emphasis on Indian stratigraphic horizons.  |                   |                  |
| <b>Unit: III</b>  | Carapace morphology, Ecdysis, Scatter diagrams (Ontogenic studies), classification, evolution and ecology/paleoecology of Ostracoda. Carapace/valve ratio, adult/juvenile ratio, predation and pyritisation of carapace to interpret paleoecology and hydrocarbon potential, Morphology, mineralogy and geological distribution of nannofossils.                        |                   |                  |
| <b>Unit: IV</b>   | Skeletal morphology, wall structure, classification, paleoecology and paleoceanography of Radiolaria - Morphology and classification of Conodonts, Bryozoa, Outline of Silicoflagellates and dinoflagellates.   |                   |                  |
| <b>Unit: V</b>  | Diatoms and Pteropods. Palynological techniques, Morphology, distinguishing characteristics of spores and pollen and their uses in oil industry, Applications of microfossils viz., biostratigraphical, paleoecological, paleobiogeographical and economical (hydrocarbon and coal) uses. Divisions of the marine environment and their characteristic fauna and flora. |                   |                  |
| <b>Reference and Textbooks:</b> <ol style="list-style-type: none"> <li>1. Haq, B.U. and Boersma, A. – An introduction to Marine Micropaleontology,</li> <li>2. Haynes, J.R. – Foraminifera</li> <li>3. Brasier, M.D. – Microfossils</li> <li>4. Bignot, G. – Elements of Micropaleontology</li> <li>5. Jones, D.J. – Introduction to Microfossils</li> <li>6. Kathal, P.K. – Microfossils and their Applications</li> <li>7. Glaessner, M.F. – Principles of Micropaleontology</li> <li>8. Moore, R.C – Treatise on Invertebrate Paleontology (Two Volumes)</li> <li>9. Van Morkhoven, F.P.C.M. – Post Palaeozoic Ostracoda. (Two Volumes)</li> <li>10. John Imbrie and Newell Norman (Ed) – Approaches to Paleoecology.</li> </ol> |   |                   |                  |
| <b>Outcomes</b> <ul style="list-style-type: none"> <li>➤ To understand the micropalaeontological techniques.</li> <li>➤ Realized the process of preparation of slides.</li> <li>➤ To gain the recent advances of micropalaeontology.</li> </ul>   |   |                   |                  |