



MANGALORE UNIVERSITY
DEPARTMENT OF BIOSCIENCES

M.Sc. ENVIRONMENTAL SCIENCE

ESS404 ENVIRONMENTAL GEOLOGY

Course Outcomes:

- CO1 Introduce environmental geology.
- CO2 Describe the structure and processes of earth.
- CO3 Study the basic aspects of paleontology.
- CO4 Know the various mineral resources available on earth.
- CO5 Gain the knowledge of geomorphology and ground water.

UNIT I (13 hours)

Introduction to Environmental Geology: Components of physical environments, geospheres - atmosphere, hydrosphere, lithosphere and biosphere.

Seismology and structure of earth: Mineralogy, seismic and tectonic processes, soil formation and its conservation; biogeochemical cycles.

UNIT II (13 hours)

Geomorphology: Weathering and erosion, slopes, valleys, streams, springs, lakes, landscapes and environmental aspects of reservoir siltation; river networks; natural hazards – earthquakes, landslides and volcanoes.

Basic aspects of paleontology: Geological time scale, ice age, geology of ocean floor, waves, tides and currents and shore line processes; environmental aspects of coastal zones; sea level rise and siltation.

UNIT III (13 hours)

Ground water - origin movement and storage of ground water, factors, controlling storage and movement; wells - permanent and artisan; springs and factors controlling their location tanks - major and minor and their siltation.

References

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2. Bateman: Economic Mineral deposits
3. Billings, M.P., Destler, L.U., 1972. Structural Geology, Prentice Hall
4. David Keith Todd, 1980. Ground water Hydrology, II Ed. John Wiley & Sons.
5. Davis, R.A Jr. 1985. Coastal sedimentary Environments.
6. Deer Howie and Zumann, 1977. Rock forming minerals. ELBS & Longmann.
7. Garlans, G.D., 1971. Introduction to Geophysics. Toppen Publ. Co., Tokyo.
8. Hughes, C.J., 1982. Igneous Petrology
9. Lehee, F.H. 1961. Field Geology, McGraw
10. Mason, B., 1958. Principles of Geochemistry
11. Open University Series, 1982. Earth Dynamics, Open University Press.
12. Pettijonn, F.J., 1975. Sedimentary rocks
13. Rose, D.A. Introduction to Oceanography.
14. Winker, H.G.F., 1988. Petrogenesis of Metamorphic Rocks. McGraw Hill Publishers.
15. Wyllie, P.J., 1971. The dynamic earth. A text book in Geoscience, John Willem & Sons.

