MANGALORE UNIVERSITY

Department of Biosciences

MSc Environmental Science

ESH402 ENVIRONMENTAL GEOLOGY

Course Outcomes:

CO1 Discuss about the importance of mineral resources and the probable impact on environment by their exploitation.
CO2 Describe the structure and processes of earth.
CO3 Study the basic aspects of environmental geology.
CO4 Learn the structure of earth and its processes.
CO5 Know the various mineral resources available on earth.
CO6 Gain the knowledge of soil conservation.

UNIT I (13 hours)

Environmental Geology: Objectives, scope and significance. Origin of the Earth, earth systems and its interaction with lithosphere, atmosphere, hydrosphere and biosphere. Motions of the earth, seasons.

UNIT II (13 hours)

Interior of the Earth: Earth's materials – minerals and their definition. Distribution and abundance of elements in the Earth's crust, formation and classification of Rocks. Soil-characteristics, formation of soil, soil erosion and conservation.

UNIT III (13 hours)

Earth's Processes: Endogenic and Exogenic processes: Earthquakes, Tsunami and Volcanism. Geological agents: River, Wind, Glaciers and Ocean action. Floods, Landslides, Cyclone and Avalanche, Concepts of major, trace and REE. Classification and mobility of trace elements, geochemical cycles, human use of trace elements and health.

UNIT IV (13 hours)

Mineral resources and environment: Resources and reserves, depletion trends of natural resources. Environmental impact of exploitation. Land use Planning- Environmental aspects of terrain evolution, methods of site selection and evaluation of land in environmental planning. Geological features of India and Karnataka.

References:

1. Reed Wicander and James, S. Monroe. Essentials of Geology, Wadsworth Publ. Co. (2002)
2. Richard, J. and Ordway, D. Earth Science and the Environment, Van Nostrand and Co., London.
3. Rose, D.A. Introduction to Oceanography.
4. Valdia, K.S. Environmental Geology (1987)
5. Venkat Reddy Winker, H.G.F. Petrogenesis of Metamorphic Rocks. McGraw Hill Publ (1988)
6. Venkat Reddy. Engineering Geology for Civil Engineers, Oxford and IBH Publ., Co. Pvt. Ltd., New Delhi (1995)