1. Haynes, J.R. Foraminifera. John Wiley and Sons, 1981.
2. Armstrong, H.A. and Brasier, M.D. Microfossils, II Edition, Blackwell Publishing, 2005.
3. Haq, B.U. and Boersma, A. (Eds) Introduction to Marine Micropaleontology. Elsevier, 1978.
4. Murray, J.W. Ecology and Palaeoecology of Benthic Foraminifera. Longman, 1991.

GLO-205: Environmental Geology	**3-0-0 = 3 credits**

Scope of environmental geology, ecosystem, lithosphere, hydrosphere, cryosphere and Atmosphere. Natural and man-made hazards. Mass movements, landslides, rock falls, subsidence and causes.

Volcanic and seismic hazards and mitigation measures. Dams and reservoirs-silting, Deforestation, seismicity, water logging and related hazards. Floods and droughts and their mitigations.

Groundwater pollution and management-case studies related to fluoride, pesticide, fertilizers and arsenic contaminations in India. Sea level changes, causative factors and related coastal hazards. Geological and hydrogeological aspects of waste disposal, site selection for solid waste disposal-sanitary landfills. Pollution from waste disposal sites. Conservation and protection of natural resources with special reference to water. EIA legislative measures in India**.**

List of Books

1. Keller, E.A. Environmental Geology, Columbus, 1985
2. Coates, D.R. Environmental Geology, John Wiley, 1981
3. Soliman, M.M. et al, Environmental Hydrogeology, Lewis Publi., 1997
4. Valdiya, K.S. Environmental Geology-Indian context
5. Tank, Environmental Geology
6. Straler and Stralher, Environmental Geology

GLO-206: Remote Sensing	**3-0-0 = 3 Credits**

Introduction and History of Remote Sensing; Basics of remote sensing: Electromagnetic Radiation (EMR): Resolution; Electomagnetic Spectrum: Optical/Microwave - Visible region - Radiation Sources: active & passive; Radiation quantities -Radiant energy, radiation flux, irradiation, radiance. Interaction of EMR with atmosphere and Earth's features: particulate scattering & absorption; Rayleigh's & Mie's theories; Atmospheric Windows. Spectral signature concepts - Spectral reflectance; spectral reflective characteristic of water, vegetation, soil, minerals/rocks; Factors affecting spectral reflectance of materials. Platforms and Sensors: Airborne platforms and Spacebome platforms - Sun synchronous and Geostationary satellites - Platform & sensor characteristics, Thermal detectors - Thermal infrared scanners; RADAR - SAR -interferometry; Introduction to Hyperspectral Remote Sensing. Applications of remote sensing in Geology, ground water & natural resource management.

List of Books

1. Sabins, F. F. Remote Sensing - Principles and Interpretation 35th Ed. W.H. Freeman, 1997
2. Jensen, J. Introductory Digital Image Processing- Remote Sensing Perspective. 2 Ed. Prentice Hall, 2003
3. Rees, W. G. : Physical Principals of remote sensing, 3rd Ed., Cambridge Univ. Press, 2013
4. Lillesand, TM, Kiefer, RW and and Chipman, JW. Remote sensing and Image Interpretation. John Wiley& sons, 5th Ed, 2003.
5. Ravi P. Gupta: Remote Sensing Geology. 3Ed., Springer-Verlag, 2003.

GLO-207: Marine Geology	**3-0-0 = 3 Credits**

Introduction and scope of marine geology, morphologic and tectonic domain of the ocean floor. Oceanic profile, oceanic features, origin of oceanic crust, ocean sediments, classification, ocean tectonics, Law of the seas, EEZ. Classification of marine mineral deposits, origin and depositional system of marine resources. Beach placers, shelf deposits,