



Government College (Autonomous), Rajamahendravaram

(Affiliated to Adikavi Nannaya University)

SEMESTER-VI- Cluster Course VIII A1

Introduction to Mineral Exploration

VIIIA-2: Environmental Geology

CO1- To have knowledge on the relation between Geology and environment and how to use the knowledge of Geology to prevent the natural disasters and protect the environment

CO2-. To make interpretation of land forms and earth processes to identify potential geologic and related manmade hazards that may impact civil structures and human development.

CO3- To understand the importance of the branch of Engineering Geology in Environmental protection

CO4- To apply the knowledge of Geology in understanding the reasons for environmental problems

Unit-I

Introduction, Concepts of environmental geology – History of environmental geology environmental awareness, Role of Geologist in environmental Protection and Planning, Management. Environmental problems- natural and manmade problems. Earth system science: atmosphere, hydrosphere and lithosphere.

Unit-II:

Definition of soil, soil formation, soil profile, Types of soils, Classification of soils and its properties, Soil distribution in India. soil degradation and contamination. Pollution: definition, types (air, water, land, soil). Global warming, ozone depletion

Unit-III

Natural disasters: earthquake and tsunamis- Earthquake terminology, seismic zones of India, history of earthquakes & tsunamis of India and major earthquakes & tsunamis in the world. Volcanoes: volcanic hazards its effects on human beings and environment. Indian volcanoes Landslides: Types, causes and mitigation methods.

Unit-IV

Coastal hazards: definition of coasts. waves and currents, types of coastal hazards, sediment supply and erosion. coastal zone protection and management. Introduction to coastal zones, Indian coast lines. Floods and cyclones: types, causes & mitigation.

Unit-V

Mining impact on environment and health hazards, Environmental considerations in location and construction of dams, reservoirs and tunnels. Types of wastes and its



disposal with special reference to hazardous chemical wastes and radioactive waste. Oil leakages in ocean and its impact on marine life.

Project work (50 Marks)

The student has to submit a project work pertaining to environmental issues in place of practical record. The submitted project will be evaluated by the external examiner and the marks will be assigned as per his/her recommendations.

Text Books:.

1. Environmental Geology - K S Valdiya
2. Environmental Geology - Sudarshan V, Ravi C and Krishna Ch
3. Living with Earth: An introduction to Environmental Geology - Travis Hudson
4. Environmental Geology - Strainer & Strahier
5. Environmental Geology - Landgreen 6. Environmental Geology – Keller