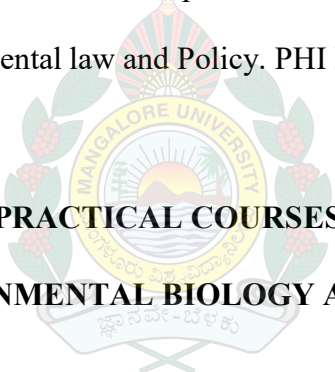


UNIT III (13 hours)

The Environment (Protection) Act, 1986; The Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008; Scheme of Labelling of Environment Friendly Products (Eco-Mark); Bio-Medical Waste Management Rules, 2016; The Plastics Manufacture, Sale and Usage Rules, 1999; The Construction and Demolition Waste Management Rules, 2016; The Municipal Solid Wastes (Management and Handling) Rules, 2000; The Noise Pollution (Regulation and Control) Rules, 2000; The Ozone Depleting Substances (Regulation and Control) Rules, 2000; The Batteries (Management and Handling) Rules, 2001; E-waste (Management) Rule, 2016.

References:

1. Dass, S. S. 2012. Environmental Law in India. Pace University.
2. Doabia, T.S., Dobia, I.P.S. and Dobian, M.S. 2017. Environmental & Pollution Laws in India. Lexis-Nexis Publisher. Gurgoan. India.
3. Environmental Laws in India- An Introduction. CPR Environmental Education Centre.
4. Gazette Notification Govt. of India (on all Acts-law and rule).
5. Kohli, K and Menon, M. 2021. Development of Environmental Law in India. Cambridge University Press.
6. Mohanty, S. K. 2016. Environmental and pollution laws. Universal law publishing company, New Delhi.
7. Venkat, A. 2011. Environmental law and Policy. PHI Learning Pvt. Ltd. New Delhi.



PRACTICAL COURSES

ESP416 ENVIRONMENTAL BIOLOGY AND ECOLOGY LAB.

Course Outcomes:

CO1 Conduct experiments to detect the physico-chemical and biological properties of water.
CO2 Understand intertidal region and mangrove vegetation.
CO3 Enhance the theoretical knowledge of environmental biology with lab experiments and observation of specimens.
CO4 Learn algal indices.

1. Study of microbial flora/planktons found in water/soil samples including pond bottom sediments.
2. Determination of Total alkalinity of different water samples.
3. Estimation of chloride in the water samples.
4. Study on biomes.
5. Determination of biological productivity in water.
6. Estimation of Nygaard's algal indices in a given water sample.
7. Determination of Total Hardness of different water samples.
8. Study of aquatic communities – Aquatic plants and animals.
9. Study of intertidal organisms.
10. Study of mangrove vegetation.

11. Study of seaweeds.
12. Identification of bryophytes, ferns and higher plants.

ESP417 ENVIRONMENTAL GEOLOGY LAB.

Course Outcomes:

CO1 Exercise and compute water budget.

CO2 Observe hand specimens to identify and classify different types of rocks.

CO3 Estimate ground water quality.

CO4 Understand environmental data interpretation.

CO5 Understand techniques of environmental geology which help in employability.

1. Identification of Minerals and Rocks.
2. Physical properties and chemical composition of various rock forming minerals.
3. Hand specimen study of Igneous, sedimentary and metamorphic rocks.
4. Classification of soils, sediment, their texture, mineralogy.
5. Interpretation of Toposheets.
6. Study of littoral drift in the field and laboratory using dye and tracer techniques.
7. Drainage Basin Analysis and drainage frequency maps.
8. Exercises related to water budget.
9. Exercises related to Potential Evapotranspiration.
10. Compute monthly water budget from the given data.
11. Ground water quality – Impact and Testing.
12. Interpretation of waves, climate, tides and currents for the given data.

ESP418 ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY LAB.

Course Outcomes:

CO1 Isolate and identify microorganisms in air/soil/water samples.

CO2 Understand the techniques and instrumentations in environmental microbiology.

CO3 Learn the techniques of coliform analysis.

CO4 Exposed to biotechnology experiments which are used for environmental management.

CO5 Learn extraction methods of DNA and RNA from different sources.

CO6 Understand vermicompost preparation and analysis.

CO7 Study on microbiology and biotechnological aspects of environmental samples which help in entrepreneurship.