

DEPARTMENT OF ENVIRONMENTAL SCIENCES**Faculty of Engineering and Technology****Program:** M. Sc. Environmental Science and Management (Regular and Self Finance)**Program Code:** M81**SYLLABUS OF ENTRANCE TEST**

Ecology-definition, Scope-Branched of Ecology. Components of the Environment-Atmosphere, Lithosphere, Hydrosphere and Biosphere, Applications of Ecology, Concept of levels of organization and biosphere. Abiotic factors-Nature of response of organisms to Abiotic factors; Laws of limiting factors and Tolerance. Concept of species, speciation, characteristics of population.

Basic components of an ecosystem-structure and functional aspects of an Ecosystem-Tropic structure-Ecological Niche-Ecological Dominance-Stability, Diversity rule. Types of aquatic ecosystem-structure and organization with examples of fresh water Ecosystem. Marine water ecosystem, estuarine water Ecosystem-Mangroves. Terrestrial Ecosystem: Tundra forest, Grassland, Desert ecosystem.

Energy flow in ecosystems-Laws of Thermodynamics. Productivity-Biomass production, primary productivity and net productivity. Food Chain – Types of food chain with examples, Foodweb, Ecological pyramid of biomes. Number and energy-inverted ecological pyramids. Biogeochemical Cycles – Availability and rate of cycling of nutrients-gaseous and Sedimentary cycle.

Air pollution – definition, sources, classification, types, effects of pollutants, gaseous and particulate matter, smog, green house effect, acid rain and ozone depletion, air quality standards.

Water pollution: definition, types, sources and classification of water pollution, ground water pollution, marine water pollution, effects of water pollution on human health, water quality standards.

Wastewater, sources of wastewater, concept of DO, BOD, COD their effects on flora and fauna. Soil pollution: Definition, sources & types – classification of soil pollutants, effects of pollution on soil, to health and productivity, wastewater discharge standards.