Appendix " AC " Item No. 53

**ENVIRONMENTAL STUDIES**

**(Mandatory Paper; Common for all the B. Tech and B.Tech+M.Tech Courses)**

**Syllabus**

Internal Marks: 30 University Exam Marks: 70

***Objective of the paper:***

We as human being are not an entity separate from the environment around us rather we are a constituent seamlessly integrated and co-exist with the environment around us .We are not an entity so separate from the environment that we can think of mastering and controlling it rather we must understand that each and every action of ours reflects on the environment and vice versa; the idea of an activity based course on environmental protection particularly to sensitize the students on the above issues are imperative.

***Chapter-1***

**Introduction** : Definition, Scope and importance of environmental studies ; Types, Characteristic features, Structure and functions of eco systems- Forest, Grassland, Desert, Aquatic (lakes, rivers and estuaries).

***Chapter-2***

**Environment and Natural Resources management** Land Resources: Land as a resource, Common property resources, land degradation, Soil erosion and desertification, Effects of modern agriculture, fertilizer pesticide problems, utilization of surface and ground water, Floods, Droughts, Water logging and salinity, Dams- benefits and costs, Conflicts over water.

***Chapter-3***

**Bio-Diversity and its Conservation :** Value of bio-diversity- Consumptive and productive use, Social, Ethical, Aesthetic and option values, Bio-geographical classification of India – India as a mega diversity habitat, Threats to biodiversity- Hot spots, habitat loss, poaching of wildlife, loss of species, seeds etc., Conservation of biodiversity;– in- situ and ex-situ conservation.

***Chapter-4***

**Environmental Pollution – Local and Global Issues Causes,** Effects and control measures of : Air pollution, Indoor air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Solid waste management, Compositing, Urban and industrial wastes, Recycling and re-use, nuclear hazards, Global warming, Acid rain Ozone depletion.

***Chapter-5***

Social Issues and the Environment Population growth and environment, Environmental education, Environmental movements, Environment Vs development; **Institutions and Governance-**Regulation by Government, Monitoring and enforcement of environmental regulation; **International Conventions-**Stockholm Conference 1972, Earth Summit 1992, World Commission for Environmental Development (WCED)

***Chapter-6***

**Case Studies** Chipko movement, Narmada Bachao Andolan, Silent valley project, Taj Majal, Tehri Dam, Ralegaon Siddhi ( Anna Hazare), Kolleru lake- Aquiculture, Florosis in Andhra Pradesh.

***Awareness Activities:***

Small group meetings about water management, promotion of recycle use; slogan making event; Cycle rally; Lectures from experts.

***Actual Activities :***

Plantations; Gifting a sapling to see its full growth; Cleanliness drive, Drive for segregation of waste; Shutting down the fans and ACs of the campus for an hour or so; Visit to a local area to document and mapping environmental assets – River / forest / grassland / hill / mountain, Study of local environment – Common plants, Insects, Birds, Study of simple ecosystems – Pond, river, hill slopes etc; Visits to Industries; Water treatment plants, Affluent treatment plants.

***Text book:***

Dr. D. K. Asthana and Dr. Meera Asthana: A Textbook of Environmental Studies, S. Chand, New Delhi, 2019.

***Reference:***

B. K. Sharma and H. Kaur: An Introduction to Environmental Pollution, Goal Publishing House, MEERUT, 2015.