ENVIRONMENTAL STUDIES
(Common to all branches)

Module 1: Introduction
Definition, Score and importance, Measuring and defining environmental development: Indicators

Module 2: Ecosystems
Introduction, Types, Characteristic features, Structure and functions of ecosystems, Forest, Grassland, Desert, Aquatic (lakes, rivers and estuaries).

Module 3: 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, Forest Resources : Use and over-exploitation, Mining and dams— their effects on forest and tribal people, Water resources : Use and over- utilization of surface and ground water, Floods, Droughts, Water logging and salinity, Dams –benefits and costs, Conflicts over water, Energy Resources : Energy needs, Renewable and non-renewable energy sources, Use of alternate energy resources, Impact of energy use on environment

Module 4: 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-sports, habitat loss, poaching of wildlife, loss of species, seeds etc., Conservation of biodiversity – in – situ and exsitu conservation.

Module 5: 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, Composting, Vermiculture, Urban and industrial wastes, Recycling and re-use, Nature of thermal pollution and nuclear hazards, Global warming, Acid rain, Ozone depletion.

Module 6: Environmental Problems in India
Drinking water, Sanitation and public health, Effect of activities of the quality of environment: Urbanization, Transportation, Industrialization, Green revolution, Water scarcity and ground water depletion, Controversies on major dams —Resettlement and rehabilitation of people problems and concerns, Rain water harvesting, Cloud seeding and watershed management.

Module 7: Economy and Environment
The economy and environment interaction, Economics of development, Preservation and conservation, Sustainability: Theory and practice, Limits to growth, Equitable use of resources for sustainable lifestyles, Environmental impact assessment.

Module 8: Social Issues and the Environment
Population growth and environment, Environmental education, Environmental movements, Environment Vs development.

Module 9: Institutions and Governance
Regulation by Government, Monitoring and enforcement of environmental regulation, Environmental acts : Water (Prevention and control of pollution) act, air (Prevention and control of pollution) act, Environmental Protection Act, Wild life protection act, Forest conservation act, Costal zone regulations, Institutions and policies relating to India, Environmental Governance.
Module 10: International Conventions

Module 11: Case Studies
Chipko movement, Narmada bachao andolan, Silent valley project, Madhura refinery and Taj Majal, Industrialization of pattancheru, Nuclear reactor at Nagarjuna Sager, Tehri Dam, Ralegaon Siddhi (Anna Hazare), Kolleru lake – Acquaculture, Florosis in Andhra Pradesh.

Module 12: Field Work
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, and Affluent treatment plants.

Textbooks: Kaushik – Kaushik, Anubha