

AECC-ENVIRONMENTAL STUDIES SYLLABUS

Number of Theory Credits	Number of lecture hours	Number of field work hours
2(L T P 3-1-0)	45	5

	Content of AECC-Environmental Studies	45 hours
Unit 1	Introduction to Environmental Studies	2
	Multidisciplinary nature of environmental studies Scope and importance; Concept of sustainability and sustainable development.	
Unit 2	Ecosystems	6
	What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, Aquatic ecosystems(ponds, streams, lakes, rivers, oceans, estuaries)	
Unit 3	Natural Resources: Renewable and Non-Renewable Resources	8
	Land resources and land-use change; Land degradation, soil erosion and desertification. Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. Water: Use and over-exploitation of surface and groundwater, floods, droughts, conflicts over water (international & inter-state). Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.	

Unit 4	Biodiversity and Conservation	8
	Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hotspots. India as a mega-biodiversity nation; Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.	
Unit 5	Environmental Pollution	8
	Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution, Nuclear hazards and human health risks Solid waste management, Control measures of urban and industrial waste Pollution case studies.	
Unit 6	Environmental Policies & Practices	7
	Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. Environment Laws: Environment Protection Act; Air(Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity(CBD). Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context	

Unit 7	Human Communities and The Environment	6
	<p>Human population growth: Impacts on environment, human health and welfare.</p> <p>Resettlement and rehabilitation of project affected persons; case studies.</p> <p>Disaster management: floods, earthquake, cyclones and landslides.</p> <p>Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan</p> <p>Environmental ethics: Role of Indian and other religions and cultures in environmental conservation</p> <p>Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).</p>	
Unit 8	Fieldwork	5

Reference

- Carson.(2002).Silent Spring. Houghton Mifflin Harcourt.
- Gadgil,M.,& Guha,R.(1993).This Fissured Land: An Ecological History of India. Univ. of California Press.
- Gleeson, B. and Low,N.(eds.)(1999).Global Ethics and Environment, London, Routledge.
- Glejck,P.H.(1993).Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ.Press.
- Groom, Martha], GaryK. Meffe, and Carl Ronald Carroll.(2006).Principles of Conservation Biology. Sunderland: Sinauer Associates.
- Grumbine, R.Edward and Pandit,M.K.(2013).Threats from India's Himalaya dams. Science, 339:36- 37.
- McCully,P.(1996). Rivers no more: the environmental effects of dams (pp.29-64).Zed Books.
- McNeill, JohnR.(2000).Something New Under the Sun: An Environmental History of the Twentieth Century.
- Nandini, N.(2019). A text book on Environmental Studies (AECC).Sapna Book House, Bengaluru.
- Odum, E.P.,Odum, H.T. &Andrews, J. (1971). Fundamentals of Ecology. Philadelphia: Saunders.
- Pepper, I.L, Gerba, C.P. & Brusseau, M.L. (2011). Environmental and Pollution Science.