

UNIVERSITY OF CALICUT

SCHEME & SYLLABUS of

AUDIT COURSE-ENVIRONMENTAL STUDIES

(CBCSS-UG – REGULATION-2019)

2019 Admission Onwards

AUD1E01 ENVIRONMENTAL STUDIES

Module 1:

Introduction – Environment in the Indian context: Concept of an ecosystem, Multidisciplinary nature of environmental studies. Components of environment- Atmosphere, hydrosphere, lithosphere and biosphere. Definition, scope and importance. Concept of sustainability and sustainable development.

Module 2: Natural Resources : Renewable and non-renewable resources : Natural resources and associated problems. a) Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e) Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies. f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification. • Role of an individual in conservation of natural resources. • Carbon footprint Water conservation, rain water harvesting, watershed management

Module 3: Structure and function of an ecosystem. • Producers, consumers and decomposers. • Energy flow in the ecosystem. • Ecological succession. • Food chains, food webs and ecological pyramids. • Introduction, types, characteristic features, structure and function of the following ecosystem :- a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Module 4: Biodiversity and its conservation • Introduction – Definition : genetic, species and ecosystem diversity. • Biogeographical classification of India • Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values • Biodiversity at global, National and local levels. • Hot-spots of biodiversity. • Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts. • Endangered and endemic species of India • Conservation of biodiversity :

Module 5: Environmental Pollution Definition • Cause, effects and control measures of :- a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards • Solid waste Management : Causes, effects and control measures of urban and industrial wastes. • Role of an individual in prevention of pollution.

Module 6: Environmental Policies and practices: Climate change, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents.

Essential Reading

1. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380 013, India, Email:mapin@icenet.net (R) c)

2. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
3. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
4. Gadgil, M., & Guha, R.1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
5. Singh, J. S., Singh, S. P. and Gupta, S. R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
6. Sodhi, N. S., Gibson, L. & Raven, P. H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.
7. Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.