West Bengal State University

EnvironmentalStudies

Value Addition Course

UG Level (NEP, 2020)

(3 Credits = 45 Classes)

Unit 1

Concept and various disciplines ofenvironmentalscience classes **15**

- Definition,scopeandimportance of Environmental Science
- Needforpublicawareness.
- Renewableandnon-renewableresources:

a) Forestresources:Useandover-exploitation,deforestation
b) Waterresources:Useandover-utilizationofsurfaceandgroundwater,floods,drought,dams-benefits and problems.
c) Mineral resources : Use and exploitation, environmental effects of extracting andusingmineral resources.
d) Foodresources:Worldfoodproblems,changescausedbymodern techniques of agriculture and overgrazing,problems due to excessive use of fertilizers and pesticides,problems of water logging and saline water intrusion.
e) Energy resources:Growingenergy needs,renewableandnonrenewableenergysources,use of alternateenergysources.
f) Land resources : Land as a resource, land degradation, man induced landslides, soilerosionand desertification.

Unit2

15 Classes

Ecosystem and biodiversity

- Conceptofanecosystem.
- Producers,consumersanddecomposers.
- Energyflow in theecosystem.
- Ecologicalsuccession.
- Foodchains,food websandecologicalpyramids.
- Introduction,types,characteristicfeatures,structureandfunctionofthe
- followingecosystem :-
    a) Forestecosystem
    b) Grasslandecosystem
    c) Desertecosystem
    d) Aquaticecosystems(ponds,streams,lakes,rivers, oceans,estuaries)

- Biodiversity Definition : genetic, species and ecosystem diversity.
- BiogeographicalclassificationofIndia
- Value of biodiversity: consumptive use, productive use, social, ethical, aestheticandoption values
- India asamega-diversitynation
- Hot-spotsofbiodiversity.
- Threatstobiodiversity:habitatloss,poachingof wildlife,man-wildlifeconflicts.
- Endangeredandendemic speciesof India

- Conservationofbiodiversity:In-situandEx-situconservationofbiodiversity**.**

Unit 3
EnvironmentalPollution and social issues **15classes**

- Types,Causes,effectsand controlmeasuresof:-
  a. Airpollution
  b. Waterpollution
  c. Soilpollution
  d. Marinepollution
  e. Noisepollution
  f. Thermalpollution
  g. Nuclearhazards

- Solid waste Management : Causes, effects and control measures of urban andindustrialwastes.
- Roleofanindividual inprevention ofpollution.
- Disastermanagement: floods,earthquake,cycloneandlandslides.
- Waterconservation,rain waterharvesting,watershedmanagement
- Concepts of populationgrowth and population explosion
- WomenandChildWelfare.
- RoleofInformationTechnologyinEnvironmentand humanhealth.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidentsandholocaust.
- Wastelandreclamation.
- Environmentalethics:Issuesandpossiblesolutions.
- Issuesinvolvedinenforcementofenvironmentallegislation and public awareness
- EnvironmentProtectionAct.
- Air(PreventionandControlofPollution)Act.
- Water(PreventionandcontrolofPollution)Act
- WildlifeProtectionAct
- ForestConservationAct

TextBook:

Text Book for Environmental Studies by ErachBharucha for UGC.(https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf