

Ph.D. Programme
(Environmental Science)

Programme Structure
&
Curriculum & Scheme of Examination
2021-22

AMITY UNIVERSITY MADHYA PRADESH
GWALIOR

Amity University Madhya Pradesh, Gwalior



Amity University Madhya Pradesh, Gwalior
COURSE II – ADVANCES IN ENVIRONMENTAL SCIENCES
Paper Code: EVS-105

MM 100

Time: 3 hrs

Pass Marks: 40%

Sesssional: 30

ESE:70

Credits - 04

Unit I: Earth and Environment

Earth as a system of interacting components, Materials of the earth, Lithosphere, Atmosphere, Hydrosphere and Biosphere. Introduction of Ecosystems, Biodiversity and its significance, Biogeography of India,

Case studies: Biodiversity of Western Ghats, Human-Animal Conflict and resource sharing, Participatory forest management.

Unit II: Ecological Community & Human Population:

Community - Community diversity, structure, dominance, stratification and periodicity; Community interdependence, Ecotone, Edge effect, Ecological Niche and Estuaries *Biomes* - Classification of Biomes,

Population dynamics: Concept of population, population growth and population explosion – global and regional human population growth, r and k selection; Causes & effects of population explosion, control of human population growth: Family welfare programs.

Unit III: Environmental Chemistry

Chemistry and environment (fundamentals), fundamentals of green chemistry, Atmospheric chemistry, Air, Water and soil pollution, Ecotoxicology, Toxicity of metals, pesticides, radioactive minerals, flourides etc, Interaction of toxicants with environment, bioaccumulation and magnification, biomarkers,

Unit –IV- Environmental Biotechnology

Environmental Biotechnology: an overview, Biotechnological solutions to Environmental Pollution, Air, Water and Soil, Emerging trends in –Agro biotechnology, Biodegradable plastics, Biotechnological methods in solid waste management, processing/treatment of hazardous wastes, Bioremediation.

Unit V: Environment Management

Environment Management: Principles, tools-EIA, LCA, Environmental audit, Environment Management Systems, Case studies – EIA

Resource Conservation – Renewable and non-renewable resources, Tools for the management of natural resources. Conservation strategies – policies and laws of GOI.

Disaster management – case studies

Examination Scheme

Component	CT	Attendance	Assignment/Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

Reference Books -

1. Stanley E.Manhan, Environmental Chemistry, CRC press 2005
2. Gary W.V.&Stephan J.D(2000),Environmental Chemistry a Global Perspective, Oxford University Press, New York
3. Wathern Peter. Environmental Impact assessment: theory and practice. Routledge London
4. Anjaneyulu Y. Environmental Impact assessment Methodologies. B S Publications Delhi