COURSE CODE :- VAC ERS1101T

OUTLINE FOR THE SYLLABUS OF A MODULE ON
ENVIRONMENT AND ROAD SAFETY
(Course Code: ERS1101T)
(2024-2025)
VALUE ADDED COURSE
FOR ALL UNDERGRADUATE PROGRAMS

Total Marks: 50 Credits: 2

Pass marks: 35% Lectures/Week : 2

Theory : 35

Max Time : 1.5 h

Internal Assessment: 15

INSTRUCTIONS FOR PAPER SETTER

The question paper will consist of three sections. Section A, B and C. Section A and B will have four questions each from the respective sections of the syllabus out of which the candidate will be required to attempt two questions each. Each question will carry 06 marks. Section C will be compulsory with 11 objective/short-answer type questions of 01 mark each which will cover the entire syllabus.

INSTRUCTIONS FOR CANDIDATES

Candidates are required to attempt any two questions from each section A and B and the entire section C, which is compulsory.

SECTION-A

INTRODUCTION TO ENVIRONMENTAL STUDIES:

The multidisciplinary nature of environmental studies. Definition, scope and importance

Concept of Biosphere – Lithosphere, Hydrosphere, Atmosphere.

ECOSYSTEM & BIODIVERSITY CONSERVATION

Ecosystem and its components, Types of Ecosystems

Biodiversity - Definition and Value, Threats to biodiversity and its conservation

Level of biological diversity: genetic, species and ecosystem diversity; bio-geographic zones of India; biodiversity patterns and global biodiversity hot spots, Endangered and endemic species of India.

Professor & Head
Department of Zoology & Environmental Sciences
Punjabi University, Patiala-147002

Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and informational value.

NATURAL RESOURCES–RENEWABLE AND NON RENEWABLE RESOURCES

Land resources and land use change; land degradation, soil erosion and desertification.

Deforestation: causes and impacts due to mining, dam building on environment.

Water: Use and over-exploitation of surface and ground water.

Energy resources: renewable and nonrenewable energy sources, use of alternate energy sources.

ENVIRONMENTAL POLLUTION

Environmental Pollution : types, causes, effects and controls; Air, Water, Soil and noise pollution. Nuclear hazards and human health risks Solid waste management, Source Segregations : Control measures of urban and Industrial waste.

SECTION-B

ENVIRONMENTAL PROTECTION LAWS IN INDIA

Environmental protection act for; Air (Prevention and control of pollution), Water (Prevention and Control of pollution), Wild life, Forest Conservation, Role of an individual in prevention of pollution.

Environmental policies & Practices; Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.

HUMAN COMMUNITIES AND THE ENVIRONMENT

Human population growth: Impacts on environment, human health and welfare, Sanitation & Hygiene. Resettlement and rehabilitation of project affected persons. Disaster management: floods, earthquake, cyclones and landslides. Environment movements: Chipko, Silent valley, Bishnois of Rajasthan. Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

Environmental communication and public awareness

ROAD SAFETY AWARENESS

Concept and significance of Road safety, Traffic signs, Traffic rules, Traffic Offences and penalties, How to obtain license, Role of first aid in Road Safety.

STUBBLE BURNING

Meaning of Stubble burning. Impact on health & environment.

Management and alternative uses of crop stubble. Environmental Legislations and Policies for Restriction of Agriculture Residue Burning in Punjab.

Field / Practical Work

All the students are required to undertake any one of the following field/practical work on basis of which students will be assessed in internal assessment.

1) To record the biodiversity of the any visited area.

2) Identify the natural resources of your area.

3) Identify sources of energy used in your area.

4) Visit to a local area to document environmental assets/ecosystems River/Forest/ Grassland/Mountain.

5) Construction of food chain / food web of the visited area

6) To identify the sources of pollution of your area

7) To record the AQI daily during stubble burning season and study its impact on health and environment

8) Case studies on various Environment movements/National river conservation plans/Wildlife conservation projects

9) Case studies on Displacement and Rehabilitation of people affected by various hydro power projects.

10) Common traffic violations and their penalties in and around your city

Books recommended

1. Rajagopalan, R. (2016) Environmental Studies Oxford University Press ,New Delhi
2. Rana,S.V.S.(2010) Essentials of Ecology and Environmental Science, PHI Learning Pvt. New Delhi
3. Sulphey, M.M.(2012) Introduction to Environment Management, PHI Learning Pvt. New Delhi
4. Sharma, S.K. (2015).Environmental Law. Wisdom Press. New Dehli
5. Sharma, P.D. (2018) Ecology and Environment .Rastogi Publishers, New Delhi
6. Santra ,S.C. (2016) Environmental Sciences. New Central Book Agency, Kolkata

7. Gadgil. M., & Guha,R.1993. This Fissured Land : An Ecological History of India. Univ. of California Press.
8. Gleeson, B. and Low, N.(eds.)1999. Global Ethics and Environment, London, Routledge.
9. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalayas dams. Science,339:36-37.
10. McCully,P.1996. Rivers no more: the environmental effects of dams (pp.29-64). Zed Books.
11. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

Professor & Head
Department of Zoology &
Environmental Sciences
Punjabi University, Patiala-147002