

E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI -14.**(An Autonomous Institution – Affiliated to Madurai Kamaraj University)****(Re-accredited (3rd Cycle) with Grade A⁺ and CGPA 3.51 by NAAC****TANSCHÉ - CBCS with OBE****ENVIRONMENTAL STUDIES - UG****(w.e.f. 2023 – 2024 Batch onwards)**

Class : ALL II UG								
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
I	Part - V	23OU4EV4	Environmental Studies	2	2	25	75	100

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Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Course Objectives:

- To create awareness on the Environment, ecosystem, energy flow, food chain, food web and Biogeochemical cycles
- To understand sustainable agriculture and exploitative human activity in polluting the environment locally and globally
- To provide awareness about issues relating to drinking and driving, Road safety rules and Traffic signals
- To create awareness on disasters through intensive public education
- To create awareness on village adoption towards clean, green infrastructure, education, health, drinking water supply, etc.

Unit I: Earth and its Environment - a) Earth formation and Evolution of Earth over time – Structure of Earth and its components: Atmosphere, Lithosphere, Hydrosphere and Biosphere b) Resources – Renewable and Non-Renewable resources.

Unit II: Ecology and Ecosystem concepts a) Ecology definition – ecosystem – definition – structure and function – energy flow- food chain and food web – one example for an ecosystem b) Biogeochemical cycles – Nitrogen, Carbon, Phosphorous, Water.

Unit III: Biodiversity and India a) Introduction- definition- values of biodiversity- threats to biodiversity conservation of biodiversity b) Biodiversity of India – as a mega diversity nation-bio-geographical distribution – hot spots of biodiversity- national biodiversity conservation board and its function.

Unit IV: Pollution and Global Issues: a) Definition, causes, effects and control measures of air,

water, soil, marine, noise, thermal and nuclear pollution. b) Global issues: Global warming and Ozone layer depletion.

Unit V: Development and disaster management a) Sustainable Development - sustainable agriculture – organic farming, irrigation – water harvesting and waste recycling – cyber waste and management. b) Disaster management – Flood and Drought – Earthquake and Tsunami – Landslides and Avalanches – Cyclones and Hurricanes – Precautions, Warnings rescue and Rehabilitation. c) Road safety rules – Traffic signals – Conduct of road safety awareness programme. d) Role of the Colleges, Teachers and Students in village adoption towards clean, green and make in villages in various aspects.

Book for Study:

1. Arumugam, N, 2016, Concepts of Ecology. Saras publication, Nagercoil.
2. Board of Editors. *Essentials of Environmental Education*. Centre for Environmental Studies, Lady Doak College, Madurai, 2014.

Books for Reference:

1. Odum, E.P. (1971). Fundamentals of Ecology. W.B. Saunders Company, London.
2. Verma, & Agarwal, (2003). Principles of Ecology. S.Chand & Company, New Delhi.
3. Anderson, J.M. (1981). Ecology for Environmental Science. Biosphere.
4. Varshney, C.K. (1984). Water Pollution and Management.
5. Sharma, P.D. (2005). Environmental Biology.
6. Parasuraman, S. (2000). India Disaster Report: Towards a Policy Initiative.
7. Kapoor, M. (2009). Disaster Management.
8. Saxena, S.C. (2005). Textbook of Highway and Traffic Engineering.
9. Prabhasthira, (2010). Road Safety Management: Issues and Perspectives.
10. Dutta, O.P. (2014). Safety and Disaster Management: Methods, Techniques, Recent Approach, Major Events & Exist Framework Hazardous Material.
11. Karan, P.P., & Subbiah, S.P. (2011). The Indian Ocean Tsunami: The Global Response to a Natural Disaster.
12. National Institute of Rural Development & Panchayati Raj (NIRD&PR) Ministry of Rural Development, GoI. (2016). Village Adoption & Development Programme Guidelines. Rajendranagar, Hyderabad – 50003.

Web Resources:

<https://www.ugc.gov.in/oldpdf/modelcurriculum/env.pdf>

[https://ncert.nic.in/pdf/syllabus/08Environmental%20\(III-V\).pdf](https://ncert.nic.in/pdf/syllabus/08Environmental%20(III-V).pdf)

Pedagogy:

Chalk and Talk, PPT, group discussion, seminar, group activities, and community involvement.

Rationale for Nature of Course:

Develop skills and confidence, in environmental conservation and management, blending theoretical knowledge with practical applications, ethical considerations, and policy awareness, address environmental challenges and contribute to a sustainable future.

Knowledge and Skill:

- Understand the Fundamental Concepts and challenges in Environmental Science
- Gain insight into environmental ethics and the cultural significance of biodiversity.
- Develop the skill in assessing human activities' impact on the environment.

Activities to be given:

Field trips, group projects, and community campaigns help develop a comprehensive understanding of environmental issues and the skills required to address them effectively.

Course learning Outcomes (CLOs):

CLO	Course Outcomes Statements	Knowledge According to Bloom's Taxonomy
CLO 1	Articulate the significance of natural resources and the need for sustainable management practices.	K1 to K3
CLO 2	Identify and differentiate between different types of ecosystems, and their specific characteristics.	K1 to K3
CLO 3	Assess the values of biodiversity, including consumptive use, social benefits, and cultural values.	K1 to K3
CLO 4	Evaluate the effects of pollution on the environment and human health.	K1 to K3
CLO 5	Explore global environmental issues and the influence of information technology on environmental awareness and conservation.	K1 to K3

K1- Remembering and recalling facts with specific answers.

K2- Basic understanding of facts and stating main ideas with general answers.

K3- Application oriented- Solving Problems.

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	1	2	1	3	3
CLO2	3	1	2	1	3	3
CLO3	3	1	2	1	3	3
CLO4	3	1	2	1	3	3
CLO5	3	1	2	1	3	3

1- Basic Level 2 - Intermediate Level 3 - Advanced Level

LESSON PLAN: TOTAL HOURS (30 Hrs.)

UNIT	DESCRIPTION	Hrs.	MODE
I	Unit I: Earth and its Environment - a) Earth formation and Evolution of Earth over time – Structure of Earth and its components: Atmosphere, Lithosphere, Hydrosphere and Biosphere b) Resources – Renewable and Non-Renewable resources.	6	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Classes.
II	Unit II: Ecology and Ecosystem concepts a) Ecology definition – ecosystem – definition – structure and function – energy flow- food chain and food web – one example for an ecosystem b) Biogeochemical cycles – Nitrogen, Carbon, Phosphorous, Water	6	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.
III	Unit III: Biodiversity and India a) Introduction- definition- values of biodiversity- threats to biodiversity conservation of biodiversity b) Biodiversity of India – as a mega diversity nation- bio-geographical distribution – hot spots of biodiversity- national biodiversity conservation board and its function.	6	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.
IV	Unit IV: Pollution and Global Issues; a) Definition, causes, effects and control measures of air, water, soil, marine, noise, thermal and nuclear pollution. b) Global issues: Global warming and	6	Chalk and Talk, PPT, group discussions, presentations, quizzes, and Virtual Class.

	Ozone layer depletion.		
V	Unit V: Development and disaster management a) Sustainable Development - sustainable agriculture – organic farming, irrigation – water harvesting and waste recycling – cyber waste and management. b) Disaster management – Flood and Drought – Earthquake and Tsunami – Landslides and Avalanches – Cyclones and Hurricanes – Precautions, Warnings rescue and Rehabilitation. c) Road safety rules – Traffic signals – Conduct of road safety awareness programme. d) Role of the Colleges, Teachers and Students in village adoption towards clean, green and make in villages in various aspects.	6	Chalk and Talk, PPT, group discussions, presentations, quizzes.

Course Designer: Dr.(Mrs.)V.Vijaya