

ENVIRONMENTAL STUDIES

Syllabus

Program Code: 21UEVG11

2021-2022 onwards

MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)

Re-accredited with "A" Grade by NAAC

PASUMALAI, MADURAI – 625 004



MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)
DEPARTMENT OF CHEMISTRY
 (For those who joined in 2021-2022 and after)

Course Name	ENVIRONMENTAL STUDIES			
Course Code	21UEVG11	L	P	C
Category	EVS	2	-	2
Nature of course:	EMPLOYABILITY	SKILL ORIENTED	✓	ENTREPRENURSHIP
Course Objectives:				
The objective of the course is				
<ul style="list-style-type: none"> • To make students learn the structure and components of environment. • To envision the truth and the reality of nature around us. • To make students realize the interrelationships between mankind and environment. • To make learners outline the nature of pollutants and their effects. • To make students helpful in Disaster management. 				
Unit: I	Earth, Environment and Natural Resources			06
Environment - Components of Environment – Types of Environment- Environmental segments- Interference of man with the Environment. Need for Environmental Education. Earth – Formation and Evolution of Earth– Structure of Earth and its components – Atmosphere, Lithosphere, Hydrosphere and Biosphere. Renewable Resources and Non-Renewable Resources. Natural Resources and Associated Problems. Use and Exploitation of Forest, Water, Mineral, Food, Land and Energy Resources.				
Unit: II	Ecology and Ecosystems			06
Ecology – definition – Scope – Objectives – Subdivisions of Ecology. Concept - Structure - Functions – Energy Flow – Food Chain and Food Web – Examples of Ecosystems (Forest, Grassland, Desert, Aquatic).				
Unit: III	Biodiversity			06
Definition – Biodiversity at Global, National and Local Level. Values of Biodiversity – Threats to Biodiversity – Conservation of Biodiversity. Biodiversity of India: Biogeographical Distribution – Hotspots of Indian Biodiversity – National Biodiversity Conservation Board and Its functions. Endangered and Endemic Species of India-RET species.				
Unit: IV	Pollution Issues:			06
Definition – Causes – Measurement, Mitigation and Management (3M) of Air, Water, Soil, Marine, Noise, Thermal and Nuclear Pollutions. Global Warming and Ozone Layer Depletion. Future plans of Global Environmental Protection Organisations.				

Unit: V	Sustainable Development & Disaster Management	06
Key aspects of Sustainable Development – Strategies for Sustainable Development - Agriculture – Organic farming – Irrigation – Water Harvesting – Water Recycling – Cyber Waste and Management; Disaster Management: Meaning – Types of Disasters - Flood and Drought – Earth quake and Tsunami – Landslides and Avalanches – Cyclones and Hurricanes – Preventions and Consequences. Management of Disasters.		
		Total Lecture Hours
		30 Hrs
Books for Study:		
1. Study Material for Environmental Studies , Mannar Thirumalai Naicker College, Pasumalai, Madurai – 625 004.		
Books for References:		
1. Study Material for Environmental Studies , Publications Division, Madurai Kamaraj University, Madurai – 625 021.		
2. R.C. Sharma and Gurbir Sangha, Environmental Studies , Kalyani Publishers, 1, Mahalakshmi Street, T.Nagar, Chennai – 600 017.		
3. Radha, Environmental Studies for Undergraduate Courses of all Branches of Higher Education, (Based on UGC Syllabus) , Prasanna Publishers & Distributors, Old No. 20, Krishnappa Street, (Near Santhosh Mahal), Chepak, Chennai – 600 005.		
4. S.N.Tripathy and Sunakar Panda, Fundamentals of Environmental Studies , Vrinda Publications (P) Ltd. B-5, Ashish Complex, (opp. To Ahicon Public School), MayurVihar, Phase-1, Delhi– 110 091.		
5. G.Rajah, Environmental Studies for All UG Courses, (Based on UGC Syllabus) , Margham Publications, 24, Rameswaram Road, T.Nagar, Chennai – 600 017.		
Web Resources:		
https://nptel.ac.in/courses/120/108/120108004/		
http://www.nptelvideos.in/2012/12/fundamentals-of-environmental-pollution.html		
Course Outcomes		K Level
After completing the course the student will be able to		
CO1:	Mention and outline the structure and components of environment	K1 & K2
CO2:	Compare different ecosystems.	K1 & K4
CO3:	classify innumerable types of species on earth	K2
CO4:	Identify the causes for various climatic changes occurring due to pollution	K3
CO5:	Describe the environmental impacts of natural and manmade disasters and Develop sustainable strategies to protect the environment.	K4

CO & PO Mapping:

COS	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	1	-	1	-	2
CO 2	1	3	1	1	1	-
CO 3	3	2	-	2	-	1
CO 4	2	2	2	-	1	-
CO 5	2	1	2	1	1	1

*3 – Advanced Application; 2 – Intermediate Development; 1 - Introductory Level

LESSON PLAN

Unit	Course Name	Hrs	Pedagogy
I	Environment – Meaning – Definition – Components of Environment – Types of Environment. Interference of man with the Environment. Need for Environmental Education. Earth – Formation and Evolution of Earth– Structure of Earth and its components – Atmosphere, Lithosphere, Hydrosphere and Biosphere. Renewable Resources and Non-Renewable Resources. Natural Resources and Associated Problems. Use and Exploitation of Forest, Water, Mineral, Food, Land and Energy Resources.	6	Ppt, Discussions
II	Ecology – Meaning - Definition – Scope – Objectives – Subdivisions of Ecology. Concept - Structure - Functions – Energy Flow – Food Chain and Food Web – Examples of Ecosystems (Forest, Grassland, Desert, Aquatic).	6	Ppt, Discussions
III	Definition – Biodiversity at Global, National and Local Level. Values of Biodiversity – Threats to Biodiversity – Conservation of Biodiversity. Biogeographical Distribution – Hotspots of Indian Biodiversity – National Biodiversity Conservation Board and Its functions. Endangered and Endemic Species of India	6	Ppt, Discussions
IV	Definition – Causes – Effects and Control Measures of Air, Water, Soil, Marine, Noise, Thermal and Nuclear Pollutions. Global Warming and Ozone Layer Depletion. Future plans of Global Environmental Protection Organisations	6	Assignments/ seminars
V	Key aspects of Sustainable Development – Strategies for Sustainable Development - Agriculture – Organic farming – Irrigation – Water Harvesting – Water Recycling – Cyber Waste and Management; Disaster Management: Meaning – Types of Disasters - Flood and Drought – Earth quake and Tsunami – Landslides and Avalanches – Cyclones and Hurricanes – Preventions and Consequences. Management of Disasters.	6	Ppt, Discussions

Course Designed by: **Ms. N. Lakshmi Kruthika**

Assistant Professor of Chemistry

Mannar Thirumalai Naicker College

Learning Outcome Based Education & Assessment (LOBE)				
Formative Examination - Blue Print				
Articulation Mapping – K Levels with Course Outcomes (COs)				
Internal	Cos	K Level	Section A	
			MCQs	
			No. of. Questions	K - Level
CIA I	CO1	K1 & K2	10 + 10	K1, K2
	CO2	K1 & K4	10 + 10	K1, K2
CIA II	CO3	K2	10 + 5 + 5	K1, K2, K3
	CO5	K4	10 + 5 + 5	K1, K2, K3
Question Pattern		No. of Questions to be asked	40	
CIA I & II		No. of Questions to be answered	40	
		Marks for each question	1	
		Total Marks for each section	40	

Distribution of Marks with K Level CIA I & CIA II							
	K Level	Section A (Multiple Choice Questions)			Total Marks	% of (Marks without choice)	Consolidate of %
CIA I	K1	20			20	20	
	K2	20			20	20	
	Marks				40		
CIA II	K1	20			20	20	
	K2	10			10	10	
	K3	10			10	10	
	Marks						

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

K4- Examining, analyzing, presentation and make inferences with evidences

CO4 will be allotted for individual Assignment which carries five marks as part of CIA component.

Summative Examination – Blue Print Articulation Mapping – K Level with Course Outcomes (COs)

S.No	COs	K - Level	MOQs			
			No. of Questions	K – Level		
1	CO1	K1 & K2	8 + 7	K1, K2		
2	CO2	K1 & K4	7 + 8	K1, K2		
3	CO3	K2	8 + 7	K1, K2		
4	CO4	K3	7 + 8	K1, K3		
5	CO5	K4	8 + 7	K1, K2		
No. of Questions to be Asked			75			
No. of Questions to be answered			75			
Marks for each question			1			
Total Marks for each section			75			

(Figures in parenthesis denotes, questions should be asked with the given K level)

Distribution of Marks with K Level

K Level	Section A (Multiple Choice Questions)	Total Marks	% of (Marks without choice)	Consolidated %
K1	38	38	38	
K2	29	29	29	
K3	8	8	8	
Marks				

NB: Higher level of performance of the students is to be assessed by attempting higher level of K levels.

Summative Examinations - Question Paper – Format

Section A (Multiple Choice Questions)			
Answer All Questions			(10x1=10 marks)
Q.No	CO	K Level	Questions
1	CO1	K1	
2	CO1	K2	
3	CO1	K1	
4	CO1	K2	
5	CO1	K1	
6	CO1	K2	
7	CO1	K1	
8	CO1	K2	
9	CO1	K1	
10	CO1	K2	
11	CO1	K1	
12	CO1	K2	
13	CO1	K1	
14	CO1	K2	
15	CO1	K1	
16	CO2	K2	
17	CO2	K1	
18	CO2	K2	
19	CO2	K1	
20	CO2	K2	
21	CO2	K1	
22	CO2	K2	
23	CO2	K1	
24	CO2	K2	
25	CO2	K1	
26	CO2	K2	
27	CO2	K1	
28	CO2	K2	
29	CO2	K1	
30	CO2	K2	
31	CO3	K1	
32	CO3	K2	
33	CO3	K1	
34	CO3	K2	
35	CO3	K1	
36	CO3	K2	
37	CO3	K1	
38	CO3	K2	
39	CO3	K1	
40	CO3	K2	

41	CO3	K1	
42	CO3	K2	
43	CO3	K1	
44	CO3	K2	
45	CO3	K1	
46	CO4	K3	
47	CO4	K1	
48	CO4	K3	
49	CO4	K1	
50	CO4	K3	
51	CO4	K1	
52	CO4	K3	
53	CO4	K1	
54	CO4	K3	
55	CO4	K1	
56	CO4	K3	
57	CO4	K1	
58	CO4	K3	
59	CO4	K1	
60	CO4	K3	
61	CO5	K1	
62	CO5	K2	
63	CO5	K1	
64	CO5	K2	
65	CO5	K1	
66	CO5	K2	
67	CO5	K1	
68	CO5	K2	
69	CO5	K1	
70	CO5	K2	
71	CO5	K1	
72	CO5	K2	
73	CO5	K1	
74	CO5	K2	
75	CO5	K1	