CLASS: I B.A. / B.Sc./B.Com.								
Semester	**Course Type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
II	Common to all		Environmental Science & Gender studies	3	3	25	75	100

Aim

To enlighten students of all programs about the principles and practices involved in their immediate environment.

Objectives

1. To create awareness o the structure and functions of different ecosystems
2. To acquire knowledge and skills to mitigate different pollution types.
3. To sensitize students regarding genders and their strength and limitations.

Unit: 1

Fundamentals: Introduction; definition; Scope. Ecosystem – Components - Biotic and abiotic; Types of Ecosystems.

Unit: 2

Energy flow - Food web and Food chain; Interactions – Mutualism, Commensalism, Parasitism, Predation and Allelopathy.

Unit: 3

Biodiversity – Importance and threats; Hotspots; Mega diversity centers; Conservation: In-Situ and Ex-Situ methods

Unit 4

Pollution: Pollutants; Causes and types – air, noise and water. Remedial measures.

Unit: 5

Gender - Types, basis, influence of genes, hormones and environment. Stages of development – Physical, physiological and mental.

Reference:

Agarwal, K.C, 2001Environmental Biology, Nidi Publ.ltd., Bikamer
Arumugam, N., & V. Kumeresan, 2005, Saras Publications.
Bharucha Erach, The Biodiversity of India, Mapia Publishing Pvt. Ltd., Ahmedabad – 380013, India.
Connel, R.W., Ashden, D., Kessler, S., Dowsett, G (1982), Making the appearance: Schools, families and Social divisions. Sydney: Allen and Unwin.
Hawkins.R.E.,m Encyclopedia of Indian National History, Bombay Natural History Society, Bomabay.
Holmes, M., 2007 What is gender? Sociological approaches, New Delhi. Sage Publications.

Course Learning Outcomes:

	CLO Statement	Knowledge level
CLO-1	Able to list out various ecosystems and their interactions	K1 & K2
CLO-2	To appreciate the nuances behind food webs and food chains	K1 & K2
CLO-3	Able to differentiate the importance of Hotspots and mega diversity centres.	K3
CLO-4	Able to identify different types of pollutions and provide solutions	K4
CLO-5	To analyze and identify the behavioral problems among student community with reference to gender.	K3

Mapping with Programme outcomes

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

3- Advance application; 2- Intermediate level; 1- Basic level

LESSON PLAN (Total hours: 45)

Unit	Description	Staff Name	Hours	Mode
I	Fundamentals: Introduction, definition, Scope.		3	Chalk and Talk, PPT, Interaction, Group Discussion
	Ecosystem – Components, Biotic and abiotic;		3	
	Types of Ecosystems.		3	
II	Energy flow		2	PPT Lecture, Group Discussion, Interaction, Chalk and Talk
	Food web and Food chain		3	
	Interactions – Mutualism, Commensalism, Parasitism, Predation and Allelopathy.		4	
III	Biodiversity-Introduction		1	Group Discussion, Interaction, Chalk and Talk, PPT lecture
	Importance and threats to Biodiversity		2	
	Hotspots; Mega diversity centers		2	
	Conservation: In-Situ and Ex-Situ methods		4	
IV	Pollution: Pollutants - Introduction		1	Group Discussion Interaction PPT Lecture Chalk and Talk
	Air pollution - causes and remedial measures		3	
	Noise pollution - causes and remedial measures		2	
	Water pollution - causes and remedial measures		3	
V	Gender - Types, basis,		2	Group Discussion, Interaction, Chalk and Talk
	Gender - influence of genes, hormones and environment.		4	
	Stages of development – physical, Physiological and mental.		3	

Course designers: Prof. S. Chellapandian, Head & Associate Professor of Botany
Dr. S. Dinakaran, Head & Associate Professor of Zoology

EVALUATION (THEORY)

Internal (Formative)	: 25 marks
External (Summative)	: 75 marks
Total	:100 marks

*Summative valuation will be single and done by the internal examiner only

Continuous Internal Assessment : 25 Marks

Components	Marks
Test (Average of two tests) Conducted for 40 marks and converted into 10 marks)	10
Assignment	5
Quiz/ Documentation/ Case lets/ ICT based Assignment/ Mini Projects	5
Attendance	5
Total	25

BLUE PRINT FOR INTERNAL ASSESSMENT - I

Articulation Mapping - K Levels with *Course Learning Outcomes (CLOs)*

Sl. No	CLOs	K-Level	Section A		Section B		Section C (Either/or Choice)	Section D (Open Choice)	Total
			MCQs		Short Answers				
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO 1 & 2	Up toK2	2	K1& K2	1	K1	2 (K2&K2)	2(K2&K2)	
2	CLO 3	Up to K4	2	K1& K2	2	K2	2 (K3&K3)	1(K4)	
No. of Questions to be asked			4		3		4	3	14
No. of Questions to be answered			4		3		2	2	11
Marks for each question			1		2		5	10	
Total Marks for each section			4		6		10	20	40

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

BLUE PRINT FOR INTERNAL ASSESSMENT - II

Articulation Mapping - K Levels with Course Learning Outcomes (CLOs)

Sl. No	CLOs	K- Level	Section A		Section B		Section C (Either/or Choice)	Section D (Open Choice)	Total
			MCQs		Short Answers				
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO 4	Up to K4	2	K1& K2	1	K1	2 (K2&K2)	2(K2/K4)	
2	CLO 5	Up to K3	2	K1& K2	2	K2	2 (K3&K3)	1(K3)	
No. of Questions to be asked			4		3		4	3	14
No. of Questions to be answered			4		3		2	2	11
Marks for each question			1		2		5	10	
Total Marks for each section			4		6		10	20	40

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

Distribution of Section-wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	**Total Marks**	% of Marks without choice	Consolidated
K1	2	2		--	**4**	6.67	**50**
K2	2	4	10	10	**26**	43.33	
K3	-	-	10	10	**20**	33.33	**33**
K4	-	-	-	10	**10**	16.67	**17**
Total Marks	4	6	20	30	**60**	100.00	**100%**

Question Paper Pattern for External Examination: 75 Marks

Section		Marks
A- Multiple Choice Questions	(10 X 1mark)	10
B- Short answer type	(5 X 2 mark)	10
C- Either/Or type	(5X 5 marks)	25
D- Open Choice type	(3out of 5 X10 marks)	30
Total		**75**

BLUE PRINT

Articulation Mapping - K Levels with *Course Learning Outcomes (CLOs)*

Sl. No	CLOs	K- Level	Section A		Section B		Section C (Either/or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K- Level	No. of Questions	K- Level		
1	CLO 1	Up to K 2	2	K1& K2	1	K1	2 (K1&K1)	1(K2)
2	CLO 2	Up to K 2	2	K1& K2	1	K1	2 (K2&K2)	1(K2)
3	CLO 3	Up to K 4	2	K1& K2	1	K2	2 (K3&K3)	1(K3)
4	CLO 4	Up to K 4	2	K1& K2	1	K2	2 (K4&K4)	1(K4)
5	CLO 5	Up to K 3	2	K1& K2	1	K2	2 (K3&K3)	1(K3)
No. of Questions to be asked			10		5		10	5
No. of Questions to be answered			10		5		5	3
Marks for each question			1		2		5	10
Total Marks for each section			10		10		25	30

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

Distribution of Section-wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	**Total Marks**	% of Marks without choice	Consolidated
K1	5	4	10	--	**19**	15.83	**50%**
K2	5	6	10	20	**41**	34.17	
K3	-	-	20	20	**40**	33.33	**33%**
K4	-	-	10	10	**20**	16.67	**17%**
Total Marks	10	10	50	50	**120**	100.00	**100%**

In respect of external examinations passing minimum is 35% for Under Graduate Courses and in total, aggregate of 40%.