DEPARTMENT OF ECONOMICS				*CLASS: I PG*				
Sem	**Course Type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
I	Major Elective – I	21P1VME1	Environmental Economics	4	5	25	75	100

Nature of Course				
Knowledge and skill	✓		Employability oriented	
Skill oriented			Entrepreneurship oriented	

Course Objectives

1. To understand the relationship between environment and Economic Development
2. To know the pollution control methods
3. To acquire the knowledge about sustainable development.

Unit	Description	Hours	K-Level	CLO
I	**Economy and Environment** Economics and Environment – Transformation Curve – Environment and Economic Systems – Subject Matter of Environmental Economics – Scope and Significance of Environmental Economics - Integration of Conservation and Development – Global Environmental Problems.	15	Up to K4	1
II	**Natural Resources Economics** Role of Natural Resources in Economic Development - Forest Resources – Benevolent Role of the Forest – Deforestation- Effects of Deforestation-– Measures to overcome deforestation - Deforestation in India - – Water Resources – Problems of Water Supply – Sustainable Water Management - Mineral Resources.	15	Up to K4	2
III	**Environmental Valuation** Meaning – Need for Environmental Valuation – Methods of Environmental Valuation – Revealed Preference methods: Travel cost method, Hedonic Price method – Expressed Preference Methods: Contingent Valuation Method – Cost Based Methods : Opportunity Cost Method, Relocation Cost Method, Replacement Cost Method - Difficulties in Measuring Environmental Values.	15	Up to K4	3
IV	**Pollution Control** Pollution Control and Environmental Protection – Pollution as an Economic Problem – Basic Approach to the Problem of Pollution Control – Moral Suasion – Direct Control – Regulation – Prohibition - - Fiscal Techniques – Effluent or residual Charges - Subsidies – Pollution permits - Refundable Deposits.	15	Up to K4	4
V	**Sustainable Development and Clean technology** Sustainable Development – Goals - Rules: Safe Minimum Standards, Hartwick - Solow Rule, London School Thought, Daly's Operational Principles - Meaning of Sustainable Industrialisation- Green Marketing – Clean Technology of production and its Types – Objectives – Case for Clean Technology - Clean Technology for Small scale industries – Swacch Bharat Mission .	18	Up to K4	5

Books for Study

1. S. Sankaran (2014), "Environmental Economics", Margham Publications, Chennai – 17.
2. M.L. Jhingan, Chander K. Sharma (2015), "Environmental Economics –Theory, Management and policy", Vrinda Publications (P) Ltd, Delhi – 91.

Books for References

1. Nick Hanely, Jason F. Shogren and Ben White (2009), "Environmental Economics in Theory and Practice", Macmillan India Limited , New Delhi.
2. Metha, Mundle and U. Sankar (2008), "Controlling Pollution: Incentives and Regulation", Sage, New Delhi.
3. T. Eugine (2010), "Environmental Economics", Vrinda Publishers, Delhi- 91.
4. U. Sankar (2000), "Environmental Economics", Oxford University Press, New Delhi.

Web Resources

1. www.envfor.nic.in

Rationale for Nature of the course

The environmental problems are social problems. They begin with people as the cause and end with people as the victim. In this context, UNO has formulated sustainable development goals with an objective of social, economical and environmental quality sustenance and to promote environmental awareness among the general public. To keep the globe clean and green.

Activities having direct bearing on skill development/ Employability / Entrepreneurship

Students are instructed to take the stock of bio-diversity status in his\ her region within the five sq.kms

Pedagogy

Lecture method, PPT, Quiz, Group discussion, Seminar, Interaction, OOC.

Course Designer

Dr. R. Gopi

Lecture Schedule

Unit	Topics	Hours	Mode
Unit I	Economics and Environment	2	Lecture Method, PPT Seminar, Test
	Transformation Curve	2	
	Environment and Economic Systems	2	
	Subject Matter of Environmental Economics	2	
	Scope and Significance of Environmental Economics	2	
	Integration of Conservation and Development	2	
	Global Environmental Problems.	3	
Unit II	Role of Natural Resources in Economic Development	2	Lecture Method, Seminar, Quiz
	Forest Resources – Benevolent Role of the Forest	3	
	Deforestation, Effects of Deforestation,	2	
	Measures to overcome deforestation, Deforestation in India	2	
	Water Resources – Problems of Water Supply	3	
	Sustainable Water Management, Mineral Resources	3	
Unit III	Need for Environmental Valuation, Methods of Environmental Valuation	3	Lecture Method, Seminar, Group Discussion
	Revealed Preference methods: Travel cost method, Hedonic Price method,	3	
	Expressed Preference Methods: Contingent Valuation Method	2	
	Cost Based Methods : Opportunity Cost Method, Relocation Cost Method,	3	
	Replacement Cost Method, Difficulties in Measuring Environmental Values.	4	
Unit IV	Pollution Control and Environmental Protection, Pollution as an Economic Problem	3	Lecture Method, Seminar, PPT
	Basic Approach to the Problem of Pollution Control, Moral Suasion , Direct Control	3	
	Regulation , Prohibition, Fiscal Techniques	3	
	Effluent or residual Charges, Subsidies	4	
	Pollution permits , Refundable Deposits.	2	
Unit V	Sustainable Development, Goals, Rules	2	Lecture Method, Seminar, OOC
	Safe Minimum Standards, Hartwick - Solow Rule,	3	
	London School Thought, Daly's Operational Principles	3	
	Meaning of Sustainable Industrialisation- Green Marketing	2	
	Clean Technology of production and its Types – Objectives – Case for Clean Technology	2	
	Clean Technology for Small scale industries – Swacch Bharat Mission .	3	
	Total	75	

Course Learning Outcome:

On successful completion of the course, the student will be able to:

CLO	Course Learning Outcome	Knowledge Level
CLO1	Understand the importance of Environment and its role in the Economic development	**Up to K2**
CLO2	identify various natural resources and their preservation	**Up to K2**
CLO3	Know the methods of environmental evaluation	**Up to K3**
CLO4	formulate the policy measures to control pollution	**Up to K4**
CLO5	implement the strategy for Sustainable Development in Social, Economical and Environmental aspects.	**Up to K3**

K1 – Remembering **K2** – Understanding

K3 – Application **K4** – Examining, analyzing and presentation

Mapping of CLOs with POs

#	PO1	PO2	PO3	PO4	PO5
CLO-1	3	2	3	2	3
CLO-2	3	3	3	2	3
CLO-3	3	2	3	2	3
CLO-4	3	2	3	1	3
CLO-5	3	2	3	1	3

Measurement of Scaling : Advanced Application-3, Intermediate Level-2, Basic Level-1.

Learning Outcome Based Education (LOBE) & Assessment

Formative – Blue – Print – Model

(Articulation Mapping with Course Learning Outcome (CLOs))

Units	CLOs	K-Level	Section - A		Section – B (Either or Choice)	Section – C (Open choice)
			Short Answers			
			No. of Questions	K-Level		
I & II	CLO 1 & 2	Up to K4	2	K2, K3	2 (K3 & K3)	2 (K2, K3)
III, IV	CLO 3 & 4	Up to K4	3	K2, K2, K3	2 (K4 & K4)	1(K3/K4)
No. of questions to be asked			5		4	3
No. of questions to be answered			5		2	2
Marks for each question			2		5	10
Total marks for each section			**10**		**10**	**20**

Learning Outcome Based Education (LOBE) & Assessment

Summative – Blue – Print – Model

(Articulation Mapping with Course Learning Outcome (CLOs))

Unit	CLOs	K-Level	Section – A MCQs		Section – B Short Answer		Section – C (Either or Choice	Section – D (Open Choice)
			No. of Questions	K-Level	No. of Questions	K-Level		
I	**CLO-1**	Up to K4	2	K1 & K1	1	K1	2 (K3 & K3)	1 (K3)
II	**CLO-2**	Up to K4	2	K2 & K3	1	K2	2 (K1 & K1)	1 (K4)
III	**CLO-3**	Up to K4	2	K2 & K3	1	K1	2 (K4 & K4)	1 (K3)
IV	**CLO-4**	Up to K4	2	K3 & K4	1	K3	2 (K4 & K4)	1 (K2)
V	**CLO-5**	Up to K4	2	K2 & K3	1	K2	2 (K2 & K2)	1 (K4)
No. of questions to be asked			10		5		10	5
No. of question to be answered			10		5		5	3
Marks for each question			1		2		5	10
Total marks for each			**10**		**10**		**25**	**30**

K1 – Remembering **K2** – Understanding

K3 – Application **K4** – Examining, analyzing and presentation

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
K1	2	4	10	-	16	13.33
K2	2	4	10	10	26	21.67
K3	4	2	10	20	36	30.00
K4	2	-	20	20	42	35.00
Total Marks	**10**	**10**	**50**	**50**	**120**	**100.00**