SEMESTER S8

ENVIRONMENTAL ECONOMICS

Course Code	PESFT861	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3: 0: 0: 0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	PE

Course Objectives:

1. Explain the concepts of willingness to pay, public goods, property rights, market and nonmarket valuation techniques
2. Summarize the economics of pollution prevention.
3. Exemplify the economic instruments for environment protection
4. Interpret the optimal use of exhaustible resources

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SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Economics: Principles of Economics – Economics, Ecology and Ethics - Wealth, Welfare, Scarcity, Growth and Sustainability definitions –– Concepts of Costs, Benefits, Opportunity costs , Social Costs –Marginal Costs and Marginal Benefits - Positive and Normative criteria for decision making - Consumer Choice theory –Supply and Demand– Economic Efficiency and Markets–Static and dynamic efficiency - market failures – property rights, externalities and environmental problems – Coase Theorem - Public Goods and Externalities - Free rider problem – Tragedy of the commons.	9
2	Environmental costs and benefits: Types of Economic value - Environmental Benefits and Environmental Costs - Valuing the Environment – Direct and indirect methods – Surrogate markets – Stated Preference and Revealed Preference methods- hedonic prices, travel cost models, contingent valuation, benefit transfer – economic valuation of ecosystem services- Assessment of Loss of Ecology - Valuation of Health impacts -	8

	Environmental accounting. Economics of pollution prevention: Economics of Environmental Quality- - Cost benefit analysis and Cost effectiveness analysis – Principles, methodology and Limitations – Discounting - Profitability of Pollution Prevention - Payback period – Present value estimation – Internal rate of return – Opportunity costs – Economic analysis of Pollution Prevention. Case studies.	
3	Economic instruments for environmental protection: Point vs. Nonpoint Sources - Stock vs. Fund Pollutants - Nature of Marginal abatement cost and that of Marginal damage cost -Efficient level of pollution, total cost of efficient level of pollution - Polluter pays Principle –Economic Optimum level of Pollution- Marginal Damage Functions – Marginal Abatement Costs - Allocation of Stock and Fund Pollutants - Economic analysis of Environmental Policy -Regulatory versus Economic Instruments – Decentralized Policies: Liability Laws, Property Rights, and Moral Suasion - Command-and-Control Strategies - Pigovian and Pollution Taxes – Incentive-Based Strategies: Emission Charges and Subsidies– Marketable permits – Emission trading -– Non Compliance fees, bonds and deposit refunds –Evaluation of Instruments – Choice of instruments for Environmental policy.	**10**
4	Natural resource economics: Types, scarcity and classification of Natural Resources – Depletable and non renewable resources – Recyclable resources – Replenishable but depletable resources – Storable renewable resources – Renewable common property Resources– Economic Theory of Depletable Resources- Optimal Use of Exhaustible Resources- – Natural resources accounting - Economics of Forestry and fisheries exploitation –Trade and environment – Income Effects and Environmental Kuznets Curves – Race to the Bottom and Pollution Haven Hypothesis - Porter Hypothesis - Economics of Climate Change.	**9**

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Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	15	10	10	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks **(8x3 =24marks)**	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. **(4x9 = 36 marks)**	**60**

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Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the concepts of willingness to pay, public goods, property rights, market and nonmarket valuation techniques	**K2**
CO2	Summarize the economics of pollution prevention.	**K3**
CO3	Exemplify the economic instruments for environment protection	**K3**
CO4	Interpret the optimal use of exhaustible resources	**K3**

Note*: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					3		2				2
CO2	3					2	3			2		3
CO3	3					2	3	2				3
CO4	3					2	3	2				3

Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Environmental Economics: An Introduction	Barry Field Martha Field	McGraw-Hill	
2	Environmental Economics	Kolstad Charles	Oxford University Press New York	(2011)
3	Environmental and Natural Resource Economics	Tom Tietenberg	Harper Collins College Publishers	5th Edition (2000)

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Reference Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Environmental Economics – In theory and practice	Nick Hanley Jaison F. Shogren Ben White	Macmillan India Ltd, New Delhi	(1999)
2	Natural Resource and Environmental Economics	Perman R Y. Ma J. McGilvray M. Common	Pearson Education Harlow	3rd edition 2003
3	Environmental Economics for non-Economists – Techniques and policies for Sustainable Development	John Asafu Adjaye	World Scientific	2005