

<b>Course title:</b> Techniques of environmental valuation				
<b>Course code:</b> MPE 175		<b>No. of credits:</b> 4	<b>L-T-P:</b> 39-17-0	<b>Learning hours:</b> 56
<b>Pre-requisite course code and title (if any):</b> None				
<b>Department:</b> Department of Policy Studies				
<b>Course coordinator:</b> Dr.Sukanya Das			<b>Course instructor:</b> Dr.Sukanya Das	
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<b>Course type:</b> Core			<b>Course offered in:</b> Semester 3	
<b>Course description:</b> The objective of this course is to familiarise the students with the methods of valuation of environmental services and their empirical application in both developed and developing countries. Participatory and case study based methods of teaching are used. Some discussions will be organised to highlight the inputs the environmental valuation studies provide for (a) designing environmental policy and (b) environmental accounting and measuring Green GDP.				
<b>Course objectives:</b>				
<b>Course contents</b>				
S.No	Topic	L	T	P
1	<b>Welfare Measures and Environmental Values</b> 1.1 Welfare Measures for Changes in Supply of Environmental Good 1.2 Environmental Values and Their Classification 1.3 Use Values, Non-use Values and Option Value	4	2	
2	<b>General Method of Environmental Valuation</b> 2.1 Environmental Valuation: An Interdisciplinary Method 2.2 Valuation when there is Irreversibility in the Choices of Use of Environmental Resources 2.3 Cost Benefit Analysis of Environmental Management Projects 2.4 Classification of Methods of Environmental Valuation.	4	2	
3	<b>Revealed Preference Methods of Valuation</b> 3.1 Household Production Function Models (a) Household health Production Function Method (b) Travel Cost Method 3.2 Hedonic Prices models (a) Hedonic Property Prices Method (b) Hedonic Wages Model	12	5	
4	<b>Stated Preferences Methods</b> 4.1 Contingent Valuation Methods 4.2 Choice Experiments and Environmental Valuation 4.3 Mixed Methods of Valuation	11	4	
5	<b>Valuing Environment as Input in Production</b> 5.1 Production Function 5.2 Cost Function 5.3 Distance Function	4	2	
6	<b>Environmental Accounting and Measuring Green GDP</b> 6.1 Conventional National Income Accounts and Environment 6.2 Environmental and Economic Accounting:UN methodology 6.3 Extending Input Output Tables forAccounting Environmental Externalities	4	2	
	<b>Total</b>	39	17	
<b>Evaluation criteria:</b>				
1.	Assignments :	25		
2.	Class Tests and Presentations :	25		
3.	Final Major Examination :	50		

**Learning outcomes:****Materials:****Suggested readings****Books:**

1. Mas-Colell, A., M.D. Whinston and J.R. Green (1995): *Microeconomic Theory*, Oxford University Press, Chapter
  2. \*Freeman, III, A.M. (1993): *The Measurement of Environmental and Resource Values: Theory and Methods*, Washington D. C: Resources for the Future.
  3. \*Mitchell, R. C., and R. T. Carson, (1989): "Using Surveys to Value Public Goods: The Contingent Valuation Method", *Resources for the Future*, Washington D.C.
  4. \*Haab, Timothy C, and Kenneth E. McConnell (2002): *Valuing Environmental and Natural Resources: The Econometrics of Non-Market Valuation*, Edward Elgar, Cheltenham, UK. Northampton MA, USA.
  5. Champ, P.A, K.J Boyle and T.C Brown (2003): *A Primer on Non-market Valuation*, Dordrecht; Boston: Kluwer Academic Publishers.
  6. \*Karl-Göran Mäler, Jeffrey R. Vincent (Edited) (2005): *Hand Book of Environmental Economics: Valuing Environmental Changes*, Volume 2, Elsevier/North-Holland, Amsterdam.
  7. Smith, V. Kerry (1997) *Estimating Economic Values for Nature: Methods for Non-Market Valuation*, Brookfield: Edward Elgar
  8. Johansson, Per Olov (1987) *The Economics Theory and Measurement of Environmental Benefits*, Cambridge: Cambridge University Press.
  9. Kopp, Raymond J. and V. Kerry Smith (1993) *Valuing Natural Assets: The Economics of Natural Resource Damage Assessment*, Washington, D.C.: Resources for the Future.
  10. I.J. Bateman and K.G. Willis (1999) (eds.). *Valuing Environmental Preferences: theory and practice of the contingent valuation method in the US, EU, and developing countries*. Oxford University Press, Oxford.
  11. John B. Braden, Charles D. Kolstad (1991) (eds.): *Measuring the demand for environmental quality*, edited by, Amsterdam ; New York : North-Holland
  12. Louviere, J. J., D.A. Hensher, J. D. Swait and W. Adamowicz (2000): *Stated Choice Methods: Analysis and Applications*. Cambridge: Cambridge University Press.
  13. Bateman, et al (2002) *Economic Valuation with Stated Preference Techniques: A Manual*, Edward Elgar Publishing, Cheltenham.
  14. Hensher D.A., Rose J.M. & Greene W.H. (2005) „*Applied Choice Analysis: A primer*“, Cambridge University Press.
  15. Bennett, J and R. Blamey (2001) *The Choice Modelling Approach to Environmental Evaluation*, Edward Elgar.
  16. TL Cherry, S. Kroll and J. F. Shogren Eds (2008) *Environmental Economics, Experimental Methods*, Routledge, UK.
  17. Ward, F.A and D.J Beal (2000), *Valuing Nature with Travel Costs Models: A Manual*, Edward Elgar, Cheltenham.
  18. UN (1993): "Integrated Environmental and Economic Accounting", Interim version (Sales No. E93 XVII. 12), United Nations, New York.
- (\* ) Compulsory Readings

**Selected Papers:**

1. \*Daniel T. Slesnick, "Empirical Approaches to the Measurement of Welfare," *Journal of Economic Literature*, December 1998, especially pp 2108-2123 , and 2125-2128.
2. Marco Becht, "The Theory and Estimation of Individual and Social Welfare Measures,"
3. *Journal of Economic Surveys*, Vol 9 No. 1, 1995, pp 53-87.
4. Hanneman, W.M. "Willingness to Pay and Willingness to Accept: How much can they differ?," *American Economic Review*, 81:635-47 (1991).
5. Shogren, J.F. et al, "Resolving Differences in Willingness to Pay and Willingness to Accept," *American Economic Review*, 84:255-70 (1994).
7. Kahneman, D. and Tversky, A. (1979) *Prospect theory: An analysis of decisions under risk*,

Econometrica, 47(2): 263-291.

8. \*Hanley N, Mourato S and Wright R (2001) "Choice Modelling Approaches: A Superior Alternative for Environmental Evaluation?" Journal of Economic Surveys, 15, 3, pp 453-557.161.
  9. Hanley, Nick, Wright, Robert E and Adamowicz, Vic (1998) Using Choice Experiments to Value the Environment: Design Issues, Current Experience and Future Prospects, Environmental and Resource Economics. 11(3-4): 413-28 161.
  10. Rolfe, John & Bennett, Jeff & Louviere, Jordan, 2000. "Choice modelling and its potential application to tropical rainforest preservation," Ecological Economics, Elsevier, vol. 35(2), pages 289-302, November.
  11. \*Viscusi (1993) "The Value of Risk to Life and Health", Journal of Economic Literature, vol 31.
  12. Viscusi, W. Kip and Joe Aldyn (2003) "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World," J. Risk and Uncertainty, 77:5-76
- (\*) Compulsory Readings

**Case Studies:**

1. Pearce David, Edited (2009): Environmental Valuation in Developed Countries: Case Studies, Edward Elgar Publishing Ltd
2. M N Murty (2009): Environment, Sustainable Development and Well-Being: Taxation, Incentives and Valuation, Oxford University Press, New Delhi, 2009.
3. M.N Murty and Surender Kumar (2003): Environmental and Economic Accounting for Industry, Oxford University Press, New Delhi, 2003
4. Markandya, A, and M.N. Murty (2000): "Cleaning Up Ganges: The Cost Benefit Analysis" Oxford University Press, New Delhi.
5. Haque, Enamuel, M N Murty and Priya Shyamsundar, Edited (2010): Environmental Valuation in South Asia, Forthcoming, Cambridge University Press, U.K.
6. Kumar, Surender and Shunsuke Managi (2009): The Economics of Sustainable Development: The Case of India, Springer Dordrecht Heidelberg London New York.

**Additional information (if any):**

**Student responsibilities:** Attendance, feedback, discipline: as per university rules.

**Course reviewers:**

**The course is reviewed and commented by the following experts.**

1. Professor A.K. Enamul Haque, Professor of Economics, Department of Economics, United International University, House # 80, Road # 8/A, Satmasjid Road, Dhanmondi, Dhaka-1209, Bangladesh
2. Dr Sangeeta Bansal, Associate Professor, School of International Studies, Jawaharlal Nehru University, New Delhi