

Department of Economics  
University of Delhi, Delhi

Minutes of Meeting

Subject : Common Pool of DSE ECON032  
Semester : III/V  
Course : Economics of Climate Change and Natural Resources – ECON032  
Date & Time : 14-May at 11:00 AM  
Venue : Department of Economics  
Chair : Surender Kumar and Swati Saini

The meeting was attended by the following teachers:

1	Anand Kumar	College of Vocational Studies
2	Pradip Kumar Biswas	College of Vocational Studies
3	V. Sushmitha Naidu	Sri Venkateswara College
4	Dr. Apoorva Gupta	Hansraj College
5	Manjula Singh	St. Stephen's College
6	Dr. Anu Satyal	College of Vocational Studies
7	Dr. Jai Ram Meena	Shaheed Bhagat Singh College
8	Swaran Lata Meena	ARSD college
9	Pooja sharma	Daulat ram college
10	Uma	LBC
11.	Sujayata Choudhry	Indraprastha College for Women

It was decided to constitute a sub-committee to recommend the topic-wise reading list. A Sub-Committee of the following teachers was formed:

Dr Pooja Sharma, Daulat Ram College

Dr Manoj Kumar, Shyam Lal College (Eve.)

The following recommendations were made by the subcommittee:

**UNIT I: Mathematical Prerequisites (12 hours)**

\*Difference equations; differential equations; phase plane analysis; dynamic optimization  
Optimal extraction of a non-renewable resource, Optimal management of renewable resources -  
Fishery and Forestry

Readings:

\*Alpha C. Chiang. (2000). Elements of dynamic optimization. Waveland Press.

\*Hoel, M. (2016). Optimal control theory with applications to resource and environmental  
economics (No.  
08/2016).

Perman, R., Yu, M., McGilvray, J., & Common, M. (2003). Natural Resource and  
Environmental. Economics Pearson Education Limited. Edinburgh Gate Harbor Essex CM20 2JE  
and Associated Companies throughout the world.

Chapter 15-introduction, 15.1-15.3, 15.6

Chapter 17-Introduction, 17.1-17.3,17.5,17.6(17.6.1 and 17.6.2)

Chapter 18

\*Teacher may consult this reading for mathematical prerequisite. The following topics will not be  
evaluated: Difference equations; differential equations; phase plane analysis; dynamic  
optimization

## **UNIT II: Energy Economics, Energy Transition, and Energy Security (12 hours)**

Introduction to Basics of supply, demand, and prices, income elasticities, the economics of  
depletable resources, world oil markets, Pathways of energy transition from conventional to  
renewable energy sources, Policy instruments, Energy security, accessibility and A definition,  
and Energy poverty

Readings

Bhattacharyya, S. C. (2019). Energy economics: concepts, issues, markets and governance.  
Springer Nature.

Chapter 3-3.1-3.5, Annexure-3.1,3.2

Chapter 9

Chapter 11-11.1,11.4 onwards

Chapter 14-14.1,14.3.2-14.3.4

Chapter 20-till 20.6

Chapter 22-22.1-22.6

Tietenberg, T., & Lewis, L. (2018). Environmental and natural resource economics. Routledge.  
Chapter 7

### **UNIT III: The Economics of Climate Change, Implications, and Policies (12 hours)**

Cost-benefit analysis, Challenges in estimating costs and benefits of greenhouse gas policies, Environmental Kuznets curve, Mitigation of climate change, Sectoral impact of Climate change, climate change, and inequality, Policy responses, and instruments

Readings:

Harris, J. M., Roach, B., & Environmental, J. M. H. (2007). The economics of global climate change. Global Development and Environment Institute Tufts University

Stern, D. I. (2004). The rise and fall of the environmental Kuznets curve. *World Development*, 32(8), 1419-1439 (Till Section 7)

Arnell, N. W., Brown, S., Gosling, S. N., Gottschalk, P., Hinkel, J., Huntingford, C., ... & Zelazowski, P. (2016). The impacts of climate change across the globe: a multi-sectoral assessment. *Climatic Change*, 134(3), 457-474.

Roberts, J. T. (2001). Global inequality and climate change. *Society & Natural Resources*, 14(6), 501-509.

### **UNIT IV: Sustainable Development (09 hours)**

Concepts and Measurement, Weak and strong sustainability, Sustainable development Goals SDGs, History of Convention UNFCCC, India's Intended Nationally Determined Contribution

Readings:

Geoffrey Heal (2012). "Reflections—Defining and Measuring Sustainability" *Review of Environmental Economics and Policy* Vol. 6, No. 1 (winter 2012), p. 147–163.

### **Internal Assessment and Final Exam**

Marks allocation in the final exam question paper would be: 90 marks (Maximum marks)

**Internal Assessment:** Two tests of 12 marks each

**Continuous Assessment:** Projects, Presentations, Educational Excursions, Case studies, Problem-solving in class.

### **Guidelines for Examiners:**

- Marks distribution in the Question paper be maintained in proportion to the lectures allocated to the topics.
- Students should be asked to answer 5 questions out of 7 to 8 questions, each of 18 marks.
- Each question must have two parts, part a and part b. Within each part, multiple parts may be avoided to maintain less lengthy question papers.
- One of the choices of the questions must contain a short note where students have to choose three parts out of 5 to 6 sub-parts. Each three-part will carry 6 marks each.

### **Readings:**

Perman, R., Yu, M., McGilvray, J., & Common, M. (2003). *Natural Resource and Environmental Economics* Pearson Education Limited. Edinburgh Gate Harbor Essex CM20 2JE and Associated Companies throughout the world.

Bhattacharyya, S. C. (2019). *Energy economics: concepts, issues, markets and governance*. Springer Nature.

Tietenberg, T., & Lewis, L. (2018). *Environmental and natural resource economics*. Routledge. Chapter 7

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