University of Management and Technology

Dr Hasan Murad School of Management (HSM)

Course Title: --Environmental and Resource Economics----------
Course Code: ----------
Resource Person: --- ----------
Department: ----Economics ----------

HSM Vision

HSM envisions its success in the sustainable contribution that it will make to the industry, academia and research in public and private sector. HSM will lead by providing professionally competent and ethically conscious human resources engaged in the global and local context to foster socio-economic growth and sustainability for the society. HSM envisages having faculty with high research potential and a deep desire for cutting edge research including collaboration with national and international partners.

HSM Mission

Being a research-oriented and student-centric business school, we emphasize research publications in impact journals as well as state-of -the-art learning methodologies. We will prepare our students to become the future ethical business leaders and the guiding post for the society, while equipping them with the knowledge and skills required by world-class professionals. We will be the leading choice for organizations seeking highly talented human resource. HSM will foster internationalization with key stakeholders and actively work to exchange best practices with business schools across Pakistan through collaborations, workshops, conferences and other means.

Program Objectives

The main objective of the program is to develop knowledge and skills of the participants. This program has been designed for students who, after completing higher secondary school, are looking for some knowledge based, career oriented, and market-driven educational program that would lead to lucrative careers. The program is a blend of theory, quantitative, research and applied areas in economics. Thus prepares students to pursue advanced research degrees like MS and PhD.

Course Objectives

This course is designed to introduce students to natural and environmental resource economics issues and theory. Emphasis is placed on understanding economic concepts such as resource scarcity, externalities, property rights, opportunity cost, sustainability, and valuation in their

application to studies of natural resources and environmental amenities. This course also provides a comprehensive economic approach to climate change: its origins, links to climate science, tasks of mitigation and adaptation, and economic instruments needed for both goals. The course places much emphasis on international climate agreement and international instruments to implement it. Key social and demographic factors will also be evaluated in the context of the demand for environmental assets and amenities. Environmental economics will help you understand some important and controversial issues – such as climate change policy, nuclear power, recycling policy, and traffic congestion charging. This is an exciting field of economics to study, and very much at the heart of many public debates and controversies.

Learning Objectives

1. Students will be able to make connection between how climate change is linked to human decisions and the incentives provided by the market.
2. Understanding the ways to apply economic principles to promote adaptation to the inevitable increase in the mean global temperature.
3. Students will explore the role of Environment and utilization of natural resource in the economy by analyzing historical data.
4. Students will be able to foresee environmental and natural resources issues in short run and long run and understand how government can intervene to overcome those Environmental challenges.

Learning Outcomes

1. Once completing the course, students would be able to understand how climate change is linked to human decisions and the incentives provided by the market.
2. They are able to analyze roles of energy production, land-use, land change and forestry. They know how to assess and use economic instruments to mitigate climate change.
3. To learn the skills needed to formulate and to solve bio-economic problems including static and dynamic problems and deterministic and stochastic problems.
4. Prepare a policy report that develops knowledge and practical implementation of relevant economic theory in understanding and addressing an environmental or natural resource issue.

Teaching Methodology (List methodologies used –example are given below)

Interactive Classes
Case based teaching
Class activities
Applied Projects
Experiential Learning

STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK

Class Policy:-

- Be On Time
  You need to be at class at the assigned time. After 10 minutes past the assigned time, you will be marked absent.

- Mobile Policy
  TURN OFF YOUR MOBILE PHONE! It is unprofessional to be texting or otherwise.

- Email Policy

  READ YOUR EMAILS! You are responsible if you miss a deadline because you did not read your email. Participants should regularly check their university emails accounts regularly and respond accordingly.

- Class Attendance Policy

  A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings are absences and will not be counted as present. You have the opportunity to use 6 absences out of 30 classes. Participants with less than 80% of attendance in a course will be given grade 'F' (Fail) and will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip. Otherwise they could reach short attendance.

- Withdraw Policy

  Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade W will be awarded to the student which shall have no impact on the calculation of the GPA of the student. A Student withdrawing after the 12th week shall be automatically awarded "F" grade which shall count in the GPA.

- Moodle

  UMT –LMS (Moodle) is an Open Source Course Management System (CMS), also known as a learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities. If you are facing any problem using moodle, visit http://oit.umt.edu.pk/moodle. For further query send your queries to moodle@umt.edu.pk

- Harassment Policy

  Sexual or any other harassment is prohibited and is constituted as punishable offence. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails etc.

- Use of Unfair Means/Honesty Policy

  Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

- Plagiarism Policy

  All students are required to attach a "Turnitin" report on every assignment, big or small. Any student who attempts to bypass "Turnitin" will receive "F" grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis etc. If student attempts to cheat "Turnitin", he/she will receive a second "F" that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.

- Communication of Results

  The results of quizzes, midterms and assignments are communicated to the participants during the semester and answer books are returned to them. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his or her performance in the course.

Course Outline

Course code…….. Course title…… Environmental and Resource Economics …

Program	Ph.D./M. Phil. Economics
Credit Hours	3
Duration	15 Weeks
Prerequisites (If any)	None
Resource Person Name and Email	
Counseling Timing (Room#)	
Contact no.	
Web Links:- (Face book, Linked In, Google Groups, Other platforms)	

Chairman/Director Programme signature……Date……..

Dean's signature……Date……..

Grade Evaluation Criteria

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

Marks Evaluation	Marks in percentage
Case Studies / Articles	15
Assignments	20
Presentation	10
Mid Term	20
Group Discussion and Peer Review Report	10
Final exam	25
Total	100

Recommended Text Books:

- William Nordaus (2013). The climate casino: Risk, uncertainty, and economics for a warming world. 1st edition. Yale University Press.
- Tietenberg, T. and L. Lewis. (2012), Environmental & Natural Resource Economics (9th Ed.)1 , Pearson Education, Inc.
- Perman, R., Ma, Y., McGilvray, J and Common, M (2003). Natural Resource and Environmental Economics. 3rd edition, Chapter 10.
- Perman R., Y. Ma, M. Common, D. Maddison, and J. McGilvray (2011) Natural Resource and Environmental Economics. Fourth Edition, Pearson-Addison Wesley.
- Peter H. Raven, David M. Hassenzahl, Mary Catherine Hager, Nancy Y. Gift and Linda R. Berg (2018). Environment, 9th Edition, John Willey & Sons. Inc.

Required Text

- Peter H. Raven, David M. Hassenzahl, Mary Catherine Hager, Nancy Y. Gift and Linda R. Berg (2018). Environment, 9th Edition, Willey Blackwell Publishers.
- Latest Research Papers relevant to the course outlines.

Course: Environmental and Resource Economics **Course** Code: EC

Books: Peter H. Raven, David M. Hassenzahl, Mary Catherine Hager, Nancy Y. Gift and Linda R. Berg (2018). Environment, 9th Edition, Willey Blackwell Publishers.

No	Topics to be covered in the course	Learning Objective of this topic	Expected Outcomes from Students	Teaching Method	Assessment Criteria	Deadlines & Homework
1	**An introduction to natural resource and environmental economics** ▪ Three themes ▪ The emergence of resource and environmental economics ▪ Fundamental issues in the economic approach to resource and environmental issues The Agenda ▪ References and Literature ▪ Conclusion	Understanding the importance of Environmental issues and Challenges	1. Students will learn the connection between climate change and human decisions and the incentives provided by the market.	Interactive Class Discussions Case study	In class Activity	Within a Week
2	**The origins of the sustainability problem** ▪ Economy–environment interdependence ▪ The drivers of environmental impact ▪ Poverty and inequality ▪ Limits to growth? ▪ The pursuit of sustainable development ▪ Conclusion	Understanding the concept of "Sustainability"	1. Students will learn the connection between Economics and Environment	Interactive Class Discussions Case study	In class Activity	Within a Week
3	**Ethics, economics and the environment** ▪ Naturalist moral philosophies ▪ Libertarian moral philosophy ▪ Utilitarianism ▪ Criticisms of utilitarianism	Understanding the concept of ethics, economics and the environment	1. Students will learn about Utilitarianism and intertemporal distribution	Interactive Class Discussions Case study	In class Activity	Within a Week

	▪ Intertemporal distribution					
4	**Concepts of sustainability** ▪ Concepts and constraints ▪ Economists on sustainability ▪ Ecologists on sustainability ▪ The institutional conception ▪ Sustainability and policy	Understanding the concept of institutional Sustainability	1. Students will learn about institutional conception about sustainability policy	Interactive Class Discussions Case study	In class Activity	Within a Week
5	**Welfare economics and the environment** ▪ Efficiency and optimality ▪ Economic efficiency ▪ An efficient allocation of resources is not unique ▪ The social welfare function and optimality ▪ Compensation tests ▪ Allocation in a market economy ▪ Efficiency given ideal conditions	Understanding the concept of welfare economics and environment	2. Students will learn about welfare economics and linkages with environment	Interactive Class Discussions Case study	In class Activity	Within a Week
6	**Markets, Market Failure and Public Policy** ▪ Partial equilibrium analysis of market efficiency ▪ Market allocations are not necessarily equitable ▪ Market failure, public policy and the environment ▪ The existence of markets for environmental services	Understanding the concept of Market Failure and Public Policy	3. Students will learn about the market structure and market failure.	Interactive Class Discussions Case study	In class Activity	Within a Week

7	**Pubic Goods and Externalities** ▪ Public goods and Externalities ▪ The second-best problem ▪ Imperfect information ▪ Government failure	Understanding the concept of Public Goods and Externalities	1. Students will learn about public private goods and externalities	Interactive Class Discussions Case study	In class Activity	Within a Week
Midterms and Term paper proposals						
9-	i. **Pollution control: targets** ii. Modelling pollution mechanisms iii. Pollution flows, pollution stocks, and pollution damage iv. The efficient level of pollution	Understanding the tools of Pollution control	1. Students will understand about pollution control targets and modelling mechanisms.	Interactive Class Discussions Case study	In class Activity	Within a Week
10-11	i. A static model of efficient flow pollution and Modified efficiency targets ii. Efficient levels of emissions of stock pollutants iii. Pollution control where damages depend on location of the emissions iv. Ambient pollution standards v. Intertemporal analysis of stock pollution and Variable decay vi. Convexity and non-convexity in damage and abatement cost functions vii. Estimating the costs of abating pollution viii. Choosing pollution targets on grounds other than economic efficiency	Understanding the application of statistics tools to link pollution with economic factors	1. Students will learn about pollution control strategies in developed and developing nations	Interactive Class Discussions Case study	Quiz	Within a Week
12-13	**Pollution control: instruments** i. Criteria for choice of pollution control instruments	Understanding the concept of Cost effective	1. Students will learn about the relative advantages of command and control,	Interactive Class Discussions	In class Activity	Within a Week

	ii. Cost efficiency and cost-effective pollution abatement instruments iii. Instruments for achieving pollution abatement targets iv. Economic incentive (quasi-market) instruments v. Pollution control where damages depend on location of the emissions vi. A comparison of the relative advantages of command and control, emissions tax, emission abatement subsidy and marketable permit instruments	pollution and Economic incentives	emissions taxes and emission abatement subsidies	Case study		
14	**Economy-wide modelling** i. Input–output analysis ii. Environmental input–output analysis iii. Costs and prices Computable general equilibrium models	Understanding economy wide modelling through input-output analysis	1. Student will lean about the application of input-out analysis	Interactive Class Discussions Case study	In class Activity	Within a Week
15	**International environmental problems** **i.** International environmental cooperation and Game theory analysis **ii.** Factors contributing to enhancing probability of international agreements or achieving a higher degree of cooperation **iii.** International treaties: conclusions	Understanding the international environmental problems	1. Student will lean about national and international environmental issues and challenges in present time.	Interactive Class Discussions Case study	In class Activity	Within a Week

	iv. Acid rain pollution and Stratospheric ozone depletion The greenhouse effect; International trade and the environment					
	Final Terms					