Course Outline: Environmental Economics

Course Title	Environmental Economics	
Course Code	ECON 3034	
Course Coordinator **Location and Office Hours**	Dr Marlene Attzs (marlene.attzs@sta.uwi.edu) FSS Room 200; Mondays 4 – 5 pm and Wednesdays 8-9:30am	
Level	Undergraduate Level III	
Semester of Offering	Semester I 2023/2024	
Course Start Date	September 13th, 2023 (Wednesdays 10-12noon)	
Department and Faculty	Department of Economics; Faculty of Social Sciences	
Units of Credit	Three (3)	
Pre-requisite or Co-requistie	ECON 1001 **AND** ECON 1002	
Teaching Methods:	1 (One) Lecture session per week (2 Hours); 1 (One) Tutorial session per week **(1 Hour; attendance will be monitored with regards to the application of Examination Regulation 19)**	
Estimated study hours (weekly)	Pre-reading (reading before lecture sessions) Post Reading Tutorial preparation Online Activities Independent Study	2 Hours 2 Hours 1 Hour ½ Hour 1 Hour
Total Number of Assessments	Online Assignment I (Quiz) 10% Individual Essay 5% Group Project 10% Group Presentation 5% 1 Final Examination (70%)	

Course Overview

Course Description

This course equips students with an understanding of the key economic principles and policies for managing natural resources; environmental valuation techniques; policy instruments for achieving environmental objectives and also economic interventions to address both climate change and natural disasters. The course exposes students to the environmental perspective of Sustainable Development and relates this perspective to Economic and Social objectives, describing the relationship between the economy and the environment. The course is also founded on the rationale that SIDS such as the Caribbean are highly dependent on their environments for their economic survival but traditionally this reality has been under-recognized in economic research and teaching in the region.
The course is organized under four main sections which firstly outline the relationship between the economy and the environment, and then further dissects the relationship according to the source, sink and threat functions of the environment. Each section details the relevant literature and further discusses case studies that elaborate on how the literature has been or can be applied. The course is therefore a combination of theoretical principles and practical application underlying environmental economics.

Lecture sessions and tutorial sessions are intended to deliver the course material but also aim to facilitate discussion of key issues that are relevant to the course. Students are expected to be prepared with readings so as to provide feedback and highlight these issues for further discussion.

Aims

The aim of this course is to develop an understanding of the importance of the environment to the economy with the goal to develop this awareness within students such that they become cognizant of how economic decision making impacts and is impacted by the environment, and further how then should the environment be efficiently managed to sustain the economy.

Students will be exposed to the role of the environment as a source of useful economic resources alongside its simultaneous role as a sink for the outcomes of consumption and production and also in terms of the economic threat it sometimes poses. This course will therefore allow students to be able to understand and describe the dynamics of the economy-environment interface while identifying appropriate mechanisms for incorporating the environment into economic decision making. This course is mandatory for students pursuing the Minor in Environmental Economics.

Objective

The Objective of this course it to deliver the course material and execute tutorial sessions over the (13) thirteen week teaching period to allow students to understand and apply the literature adequately enough to meet the learning outcomes as indicated.

Learning Outcomes

1. Use Economic Theories and Concepts to explain the Economic Value of the Environment, and the implications of such;
2. To critically review the economic literature on the interface between the economy, society and the natural environment;
3. To critically apply the literature reviewed in (1) above, to the case of Small & Island Developing States (SIDS), particularly in the Caribbean.

Learning Outcomes Guide

Upon Successful Completion of ECON 3034: students will be able to:	**Cognitive Domain**	**Psychomotor Domain**	**Affective Domain**
1. 1. Use Economic Theories and Concepts to explain the Economic Value of the Environment, and the implications of such;	Knowledge Comprehension	Perceptual Ability	Receiving Organization
2. To critically review the economic literature on the interface between the economy, society and the natural environment;	Knowledge Comprehension Application Analysis Synthesis	Manipulation Articulation	Responding Valuing
3. To critically apply the literature reviewed in (1) above, to the case of Small & Island Developing States (SIDS), particularly in the Caribbean.	Application Comprehension Application Analysis Synthesis Evaluation	Manipulation Articulation	Characterization

Assessment and Assignments

This course is assessed as follows:

Assessment Item	Weighting	Opening date of assignment	Closing date for Assignment
Online Assignment I (Quiz)*	10%	20th September 2023	21st September 2023
Individual Essay	5%	17th October 2023	21st October 2023
Group Project	10%	1st November 2023	19th November 2023
Group Presentation	5%	22nd November 2023	
Final Exam	**70%**	**To be announced**	

Coursework Group Project Assignment: Students will be divided into groups and assigned a particular group project.
All students are required to complete and submit peer evaluation forms, and plagiarism declaration forms along with the submission of the project to the Department of Economics.

Penalties will be applied for late submissions.

Teaching Methods

One 2-hour weekly lecture (Wednesdays 10am -12 noon, FSS 10W) supported by a one-hour weekly tutorial. Students are reminded of the application of the Examination Regulation 19 concerning tutorial attendance.

Readings/Resources

- Titienberg, T. Environmental and Natural Resource Economics, Harper Collins College
- Publishers, 9th edition, 2010.

- **Perman, R., Ma, Y., McGilvray J., and M Common (2003), Natural Resource and Environmental Economics, Pearson. Chapter 15**

- Dennis A. Pantin, Marlene Attzs, Justin Ram and Winston Rennie: The Economics of an Integrated Watershed Management Approach to Sustainable Development in Small Island developing States: From Ridge to Reef.

- R. Kerry Turner, David Pearce and Ian Bateman: Environmental Economics. Harvester Wheatsheaf. 1994 (or later edition).

Reading List

1. **Introduction: The Triple Inter-Face between the Environment and the Socio-Economy: Source, Sink and Menace**
2. **The Economics of the Source Function of the Environment**

(A) The Economics of Non-renewable Resources

i. **Inter-generational Equity and optimal depletion;**

- Turner, Pearce and Bateman(1994), Ch. 16
- Pantin, D.A (1980): Resource Depletion Theories and Planning in Mineral Exporting Economies with particular reference to Petroleum Exporters. OPEC Review. Vol. IV. No.

ii. **National Income Accounting and Genuine Savings;**

- Kirk Hamilton and Michael Clemens (2003): Genuine Savings Rates in Developing Countries. World Bank Economic Review.Vol. 13. No.2. pp.333-56

iii. **Control and Utilisation of Natural Resource Rents**

- Atkinson, G. (2000) Savings, Growth and the Resource Curse Hypothesis, (mimeo)
- Pantin, D.A. Governance in Natural Resource based Rentier economies in the Caribbean, in Dennis Pantin(ed.). Reader in Caribbean Economy. 2005

(B) The Economics of Renewable Resources

i. **An Introduction to Fisheries Economics and Tourism**

The Economics of Fishing and Fisheries Economics.

ii. **The Economics of Biodiversity of Ecosystem Services**

3. **The Economics of the Sink Function of the Environment**

(A) Pollution (definition, types); externalities and the micro (welfare) economics of pollution;

- Pearce, David and Edward B. Barbier (2000): Blueprint for a Sustainable Economy.
- Earthscan. Chapter 6,9
- Turner, Pearce and Bateman (1994), Chapters 5-6
- Callan, Scott J and Janet M. Thomas (2000): Environmental Economics and Management. Harcourt, Inc.: Ch.3. Modeling Market Failure

- Wallace E. Oates and Maureen L. Cropper: Environmental Economics: A survey (1992). Journal of Economic Literature.Vol.XXX. June. Pp.675-740

(B) Steps in, and Tools for, Internalisation of Externalities

i. Measurement of Impacts

Noise pollution, Solid Waste

Class Note

ii. Valuation of Environmental impacts

- Pantin et al(2008). Chapter 2.
- Pantin, D.A. et al (2008): Chapters 2, 9
- World Bank (1998): Economic Analysis and Environmental Assessment. Environment Dept. Update No.23, April.
- Robert R. Hearne (1996): Economic Appraisal of Goods and Services. IIED. DP 96-03.
- R. Costanza et al. (1997): The Value of the world's ecosystem services and natural capital. Nature, Vol. 387, May. pp.253-260.
- D.W. Pearce, Review of Costanza et al (1997) and their reply in Environment, Vol.
  No.2.pp.23-27.

iii. Policy Instruments (P.I.) to Internalize Externalities

Survey and Assessment of Environmental Taxes in the Caribbean

- Pantin, et al. (2008) Chapter 3- 8)
- Theodore Panayotou (1998): Instruments of Change: Motivating and Financing Sustainable Development. Earthscan.Chs. 1-4, 7-8,
- Pearce, David and Edward B. Barbier (2000).ibid. Chapters 8, pp. 196-209
- R. Kerry Turner et al.(1994).ibid., Chs. 10-14, pp.141-202

- T.H. Tietenberg in Daly and Townsend (eds).ibid. (1993).Ch. 8, pp.315-324.

iv. The Special Role of Environmental Cost Benefit Analysis

- Nick Hemley and Clive L. Spash (1993): Cost-Benefit Analysis and the Environment. Edward Elgar. Part 1: Theories and Methods, Chs. 3-7, pp.53-126

- Boardman A, D Greenberg, A Vining, D Weimer, 1996. *Cost-Benefit Analysis: Concepts and Practice*, Prentice Hall, Upper Saddle River, USA.

v. Ecological Footprints

- Venetoulis, J., & Talberth, a. J. (2006). Refining the Ecological Footprint. *Journal of Environment, Development and Sustainability (2008) - Vol. 10*, 441-469.
- Wackernagel et al, M. (2005). *National Footprint and Biocapacity Accounts 2005: Then Underlying Calculation Method.* Oakland: Global Footprint Network.
- Wiedmann, T., & Minx, J. (2008). *A Definition of 'Carbon Footprint'*. New York: Nova Science Publishers.
- Schaefer et al, F. (2006). *Ecological Footprint and Biocapacity:The world's ability to regenerate resources and absorb waste in a limited time period.* Luxembourg: The European Commission.

4. The Economics of The Threat Function[1]

- ECLAC 2010. The Impact of Climate Change on the Macroeconomy in the Caribbean

- Pantin, D.A., M. Attzs: Economics of natural disasters in the Caribbean. Draft ECLAC study. 2009

- Attzs, Marlene (2008). Natural Disasters, Climate Change and the Caribbean Tourism Industry. In D.A. Pantin et al. The Economics of an Integrated (Watershed) approach to Environmental Management in SIDS: From Ridge to Reef..

- .....(2009) Climate Change and Sustainable Tourism in Caribbean Small Island Developing States. In Clayton and Hayle (eds) Climate change and Tourism in the Caribbean.

[1]Additional readings to be provided.

Course Calendar

Teaching Week (*beginning September 13th 2023*)	**Unit Number /Title**	**Unit Description**	**Unit Content**
1	1.		
2	**2.The Economics of the Source Function of the Environment**	(A) The Economics of Non- renewable Resources	i. Inter-generational Equity and optimal depletion;
2			ii.National Income Accounting and Genuine Savings;
2			iii.Control and Utilisation of Natural Resource Rents
3		(B) The Economics of Renewable Resources	i. An Introduction to Fisheries Economics and Tourism
4			ii.The Economics of Biodiversity of Ecosystem Services
5	**3.The Economics of the Sink Function of the Environment**	(A)Pollution (definition, types); externalities and the micro (welfare) economics of pollution	
6		(B)Steps in, and Tools for, Internalisation of Externalities	i.Measurement of Impacts
7			ii.Valuation of Environmental impacts
8			iii.Policy Instruments (P.I.) to Internalize Externalities
8			iv.The Special Role of Environmental Cost Benefit Analysis
9			v.Ecological Footprints
10	**4.The Economics of The Threat Function**		
11	**Group Presentations**		
11	**Review Session**		

Policies to Note

Regulation 11 on Coursework:

b. Only a coursework mark of 40% will be transferred within the period outlined i.e. one (1) year limit. A student who meets this requirement must not attempt coursework for the said period, as this approval will become null and void.

Examination regulations no. 19 and 78 which states:

UWI Examination Regulation No. 19 "*Any candidate who has been absent from the University for a prolonged period during the teaching of a particular course for any reason other than illness or whose attendance at prescribed lectures, classes, ... tutorials, ... has been unsatisfactory or who has failed to submit essays or other exercises set by his/her teachers, may be debarred by the relevant Academic Board, on the recommendation of the relevant Faculty Board, from taking any University examinations. The procedures to be used shall be prescribed in Faculty Regulations*."

In this connection, the Faculty of Social Sciences **requires students to attend AND participate in at least 75% of tutorials**.

78. (i) Cheating shall constitute a major offence under these regulations.

(ii) Cheating is any attempt to benefit one's self or another by deceit or fraud.

(iii) Plagiarism is a form of cheating.

(iv) Plagiarism is the unauthorised and/or unacknowledged use of another person's intellectual efforts and creations howsoever recorded, including whether formally published or in manuscript or in typescript or other printed or electronically presented form and includes taking passages, ideas or structures from another work or author without proper and unequivocal attribution of such source(s), using the conventions for attributions or citing used in this University.

In this connection, any collaborations during the completion of individual assignments (online coursework and final examinations) will constitute as cheating also.

Marking Scheme for Examinations in the Faculty of Social Sciences

21. (i) In the determination of GPA, the grades with corresponding quality points shall be as defined in the University Regulations governing the GPA.

The authorized marking scheme as of Academic Year 2014/2015 is as follows:

Grade	% Range	Quality Points
A+	90-100	4.3
A	80-89	4
A-	75-79	3.7
B+	70-74	3.3
B	65-69	3.0
B-	60-64	2.7
C+	55-59	2.3
C	50-54	2.0
F1	40-49	1.7
F2	30-40	1.3
F3	0-29	0.0

Department of Economics
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