

# DIMORIA COLLEGE, KHETRI

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## 3RD CYCLE NAAC ACCREDITATION 2022

### CRITERION 1

#### 1.3 CURRICULUM ENRICHMENT

1.3.1 The institutional integrates cross cutting issues relevant to professional Ethics, Gender, Human Values, Environment and Sustainability into the curriculum

*Submitted to*



**National Assessment and Accreditation Council**  
An Autonomous Institution of the University Grants Commission

राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद्  
विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

The following departments of our institution teach the cross cutting issues relevant to professional Ethics, Gender, Human Values, Environment and Sustainability into the curriculum as per respective university syllabus.

<b>Sl. No.</b>	<b>Name of the Department</b>	<b>Paper Name &amp; Code</b>	<b>Remarks</b>
1	ECONOMICS	ECO-1046: Elements of Development Economics	
2	ECONOMICS	ECO-3066: Environmental Economics	
3	ECONOMICS	ECO 4116: Environment and Energy Economics	
4	POLITICAL SCIENCE	POL-RC -2016: Indian Government and Politics	
5	EDUCATION	EDU-HC-3036: Value and Peace Education	
6	GEOGRAPHY	GGY-HC-4016: Environmental Geography and Disaster Management	
7	ECO-RESTORATION	ER-201: Traditional Societies and Environmental Issues.	
8	ECO-RESTORATION	ER-204: Restoration Ecology and Ethics	
9	ECO-RESTORATION	ER-304: Ecological Economics and Sustainable Development	
10	ENVIRONMENT MANAGEMENT	EM-203: Management Process and organizational Behaviours	
11	ENVIRONMENT MANAGEMENT	EM-204: Environmental Law and Management	
12	ANTHROPOLOGY	ANT-SE-4014: Public Health and Epidemiology	

# 1. ECO 1046

## Elements of Development Economics

### **Unit – 1: Development and its Measurement**

Problems in Defining Economic Development, Per Capita Income as an Index of Development, Alternative Measures of Development Gap: HDI, GDI and related indices.

### **Unit – 2: Poverty and Inequality**

Poverty: Concepts and Measurement, Income Inequality: Axioms, Index and Measures, Redistribution with Growth

### **Course Outcomes**

- To get an insight into the real meaning of development, and how elements of economics and political economy influence the allocation of resources and can facilitate, or under certain situations, hamper the reduction of poverty, inequality and unemployment in a given society.
  
- To interpret the various development strategies and theories to assess the different development paths followed by different societies of the world. This can assist them in answering certain basic questions as to why some countries grow at a fast rate, while others lag behind; what are the conditions that can promote growth, and what are the conditions that can hinder growth, among others.

### **Recommended Readings:**

1. Barro & Salai-Martin, “Economic Growth”, Prentice Hall of India.
2. Basu, K., “Analytical Development Economics:”, OUP.
3. Meier, G.M., “Leading Issues in Economic Development”, OUP.
4. Roy, D., “Development Economics”, OUP.
5. Thirlwall, A. P. “ Growth and Development” Palgrave
6. Todaro, M.P., “Development Economics”, Pearson.
7. UNDP, “Human Development Reports”, OUP.
8. World Bank, “World Development Reports”, OUP

## **2. ECO 3066**

### **Environmental Economics**

*(Elective/Open)*

*The primary objective of this paper is to introduce the students to environmental issues with an interdisciplinary focus. The paper will be especially appropriate for students with major in Economics, Political Science, Environmental Science and Biological Sciences*

#### **Unit –1: Environmental Economics as a sub discipline in Economics**

Environmental Economics –Scope and Nature- Environmental Economics , Ecological Economics and Resource Economics.

Basic Concepts : Natural Resources-Renewable and Non-Renewable, Market Failure, Externality, Property Rights , Transaction costs, Pigouvian Tax – Environment as Public Goods- Open Access – The Tragedy of Commons.

Global Environmental Issues- Climate Change, Loss of Biodiversity, Ozone Depletion, Pollution Havens-

#### **Unit –2: Environment and the Economy- the neoclassical perspective**

Environment and the Economy : the neoclassical perspective- Role of natural environment on the economy-market as a provider of information on resource scarcity-price as an indicator of absolute, relative and emerging resource scarcity; Factor substitution possibilities , technical change- implications on resource scarcity and resource conservation. Economy and the environment- Neoclassical worldview.

#### **Unit –3: Environment and the Economy-An ecological perspective**

Environment and the Economy : An ecological perspective – Ecosystem structure,Ecosystem function-materials recycling-energy and thermodynamics, Ecological Succession, Ecology and its implications for the economy.

#### **Unit – 4: Economics of Natural Resources**

Economic Issues relating to use of Non-renewable Resources, Optimal Depletion – Issues relating to Renewable resources, Sustainable exploitation, Common Property Resources – Case studies (e.g Sacred groves)

#### **Unit –5: Valuation of Environmental Goods and Services**

Demand for environmental goods –ordinary goods vs. environmental goods- Willingness to pay and willingness to accept- Use and Nonuse Values; measuring demand-revealed preference and stated preference. Methods for measuring benefits of environmental improvement –the market pricing approach, the replacement cost approach. Hedonic Pricing approach-valuation of health risks; Household Production Function Approach-Aversive expenditure, Travel Cost method; Contingent Valuation Method

#### **Unit –6: Pollution Control**

Pollution Prevention, Control and Abatement – Command and Control and Market Based Instruments –Taxes Vs Tradable Permits ; International Conventions and Protocols ; Environmental Policy in India-Environmental Impact Assessment.

#### **Unit –7: Environment and Development**

Environment Development Trade off : Population, development and environmental degradation in the developing world -Poverty and Environment – Affluence and its contribution to environmental

degradation Sustainable Development-Hartwick-Solow Approach, ecological economics approach-safe minimum standard approach; Sustainable National Income Accounting .

**Course Outcomes**

- The primary objective of this paper is to introduce the students to environmental issues with an interdisciplinary focus.
- The paper will be especially appropriate for students with major in Economics, Political Science, Environmental Science and Biological Sciences
- To analyse the working of the Environment and the Economy from the neoclassical and ecological perspective
- To interpret the issues related to the use of natural resources
- To explain the various techniques of valuation of environmental goods and services.
- To explore the relationship between environment and development.
- To discuss various pollution control measures.

**Recommended Readings:**

1. Bhattacharjya, R., *Environmental Economics*”, Oxford University Press.
2. Hanley, Shogren and White, *Environmental Economics*, Macmillan.
3. Hussen, Ahmed, (2004)*Principles of Environmental Economics*,Routledge
4. Kolstad, Charles D., *Environmental Economics*, Oxford University Press.
5. Kolstad, Charles D.,(2011) *Intermediate Environmental Economics*, Oxford University Press.
6. Shanker, U, *Environmental Economics*, Oxford University Press.

**3. ECO 4116**  
**ENVIRONMENT AND ENERGY ECONOMICS**  
*[Elective]*

**Unit – 1: Environment and Economy Linkage:**

Environment as a source of resources and energy-Earth, life and biosphere, Ecosystem, components of Ecosystem: Biotic Environment, Abiotic Environment, Inorganic Substances, Organic Substances; Climate Condition and Limiting Factors; Soil, Energy, Biodiversity. Concept of Energy and its Role in the Biosphere; Energy Flow along Food Chain.

44 of 46 **Unit – 2: Environmental problems**

Local and Global Environmental Problems: Air Pollution, Water Pollution, Noise Pollution, Light Pollution; Climate change , Global warming ,Loss of biodiversity.

**Unit – 3: Environmental Management**

Management Systems for Environment: Command and Control, Market Based Instruments, Community Management; Environmental Impact Management. International Conventions and Protocols.

**Unit – 4: Energy Demand Management**

Definition, Evolution, Justification-Load Management-Energy Efficiency Improvements and Energy Conservation-Cost-effectiveness-Energy efficiency debate

**Unit – 5: Economics of Energy Supply**

Economic analysis of energy instruments- Economics of fossil fuel supply, electricity supply, renewable energy supply, non-renewable resource supply etc.

**Unit – 6: Student Presentations (based on case studies, empirical findings).**

**Course Outcomes**

- Assess the value of environmental resources
- Analyse the ill effects of excessive use of energy
- Deliberate on the more efficient use of energy and the environmental resources
- To identify/quantify demand and supply factors of energy
- To develop models /policies for more efficient energy use by institutions

**Recommended Readings:**

1. Bhattacharyya, R.N. (ed)(2001) *Environmental Economics: An Indian Perspective*, Oxford New Delhi
2. Bhattacharyya, Subhes C. (2011) *Energy Economics - Concepts, Issues, Markets and Governance*, Springer New York
3. Sengupta, Ramprasad (2001) *Ecology and Economics: An Approach to Sustainable Development*, Oxford New Delhi
4. Singh, Katar, Shishodia Anil, (2007) “*Environmental Economics: Theory and Applications*” Sage texts

## **SEMESTER II**

### **POL RC 2016 Indian Government and Politics**

#### **Course outcomes:**

After reading the course the student will be able to

- Appreciate the approaches to the study of Indian politics and the changing nature of the state
- Understand the basic features of the Indian constitution and its institutional functioning
- Examine the changing role of caste, class and patriarchy and their impact on politics
- Understand the dynamics of social movements in India.

**Unit 1.** Approaches to the Study of Indian Politics and Nature of the State in India: Liberal, Marxist and Gandhian (9 lectures)

**Unit 2.** Indian Constitution: basic features, debates on Fundamental Rights and Directive Principles (9 lectures)

**Unit 3.** Institutional Functioning: Prime Minister, Parliament and Judiciary (9 lectures)

**Unit 4.** Power Structure in India: Caste, class and patriarchy (7 lectures)

**Unit 5.** Religion and Politics: debates on secularism and communalism (6 lectures)

**Unit 6.** Parties and Party systems in India (5 lectures)

**Unit 7.** Social Movements : Workers and Peasants (10 lectures)

**Unit 8.** Strategies of Development in India since Independence: Planned Economy and Neo-liberalism (5 lectures)

EDU-HC-3036  
**VALUE AND PEACE EDUCATION**  
 Total Marks: 100 (External: 80 and Internal: 20)  
 Credit-6

**Course Objectives:**

After completion of this course the learner will be able to:

- Understand the concept and meaning of value.
- Become aware about the role of educational institutions in building a value based society.
- Understand the meaning and concept of peace and its importance in human life.
- Understand the meaning and importance of peace education and its relevance at national and international level.
- Identify the different issues/ challenges in imparting peace education.
- Identify the strategies and skills in promoting peace education at institutional level.

**Course contents**

Unit	Contents
Unit-1	Value <ul style="list-style-type: none"> <li>• Concept and characteristics of value.</li> <li>• Sources of values</li> <li>• Impact of globalization on culture and values.</li> <li>• Importance of values in human life</li> </ul>
Unit-2	Types of values, their characteristics, functions and educational significance <ul style="list-style-type: none"> <li>• Core values.</li> <li>• Social values</li> <li>• Moral values</li> <li>• Religious and spiritual values.</li> <li>• Aesthetic values.</li> <li>• Personal values</li> </ul>
Unit-3	Value education <ul style="list-style-type: none"> <li>• Concept, characteristics, Objectives and Importance of value education.</li> <li>• Value education at different stages –               <ul style="list-style-type: none"> <li>- Primary</li> <li>- Secondary</li> <li>- Higher education.</li> </ul> </li> <li>• Role of teacher and family in imparting value education.</li> </ul>
Unit-4	Peace education <ul style="list-style-type: none"> <li>• Meaning, definition and characteristics of peace.</li> <li>• Importance of peace in human life.</li> </ul>



CBCS-based U.G. Course in Geography, 2019

Syllabus of Core Course

Course Name: Environmental Geography and Disaster management

Paper Code: GGY - HC - 4016

*Course objectives*

- This paper is a core paper that intends to introduce students to geography and environment interface
- It seeks to develop new insights among students on the relevance of environmental studies from a spatial perspective.

*Course outcomes*

- The paper will be useful for students in developing ideas on environmental issues that geographers usually address
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Environmental Geography

1. Environmental Geography – Concept, Scope and Significance
2. Human-Environment Relationships – Historical Progression, Adaptation in different Biomes.
3. Eco-system: concept, types and components, structure and functions; Ecology– Concept and principles.

<b>Course code</b> <b>ER - 201</b>	<b>Course name: Traditional Societies and Environmental Issues.</b> <b>Marks. ES 60</b> <b>IS 15</b> <b>Total 75 Credit 3</b> <span style="float: right;"><b>(Total hours — 40)</b></span>
Unit - I	Outline of indigenous communities and traditional folklore of North East India; Utilization of natural resources by indigenous communities. Agro- ecosystem types in North East India and other parts of the country <p style="text-align: right;"><b>(8 hours)</b></p>
Unit - II	Shifting cultivation: present status, cropping and yield patterns, energy budgets, weed potential, soil fertility patterns, nutrient budgets; Shifting cultivation management; Ecological impacts on ecosystem; Policies involved. <p style="text-align: right;"><b>(8 hours)</b></p>
Unit - III	Tropical agriculture : rainforest ecology; Status of tropical rain forest in North East India; Tropical agriculture and future of tropical ecosystems; Indigenous knowledge on tropical ecorestoration; Future of tropical ecosystems. <p style="text-align: right;"><b>(8hours)</b></p>
Unit - IV	Ecology of riparian zone; important biota, economic activities; Flood and its impact on wildlife, crop and human life. Structural devices used to mitigate flood and their impact on riverine biota and ecosystem <p style="text-align: right;"><b>(8 hours)</b></p>
Unit - V	Northeast Village-system, Ecological and economic efficiencies of various traditional land-use systems; Pressure on land in hilly and riparian areas. <p style="text-align: right;"><b>(8 hours)</b></p>

<b>Course code</b> <b>ER - 204</b>	<b>Course name: Restoration Ecology and Ethics</b> <b>Marks= ES 60</b> <b>IS 15</b> <b>Total = 75 Credit 3</b> <b>(Total hours -40)</b>
Unit -I	Eco-degradation : types and identification; Mining : Restoration of mining habitats; Re-vegetation in toxic waste site cleanup; Rare plant species : Reintroduction and management, Role of soil biota and restoration process. <b>(8 hours)</b>
Unit -II	Wildlife habitat restoration : amelioration of impacts of past excessive resource use (grazing, cutting, farming, etc.); Arid lands restoration; Water quality improvement; Evaluation of habitat restoration; Restoration following natural catastrophes; Reversal of trends in habitat loss. <b>(9 hours)</b>
Unit -III	System approach to ecorestoration, development of wetland and wasteland restoration in critical and vulnerable areas; Alternative _livelihood strategies; Mitigation for impacts of land development. <b>(8 hours)</b>
Unit -IV	Ecorestoration :Analyzing ethical dilemmas and conflicting issues; Dilemmas of humanitarian intervention; Sacred culture and beliefs in traditional societies; Genetically modified organisms and bio-piracy in ecorestoration; Right to information. <b>(7 hours)</b>
Unit - V	Ethics in ecorestoration : virtue, utilitarian and deontological theories; Religion and ethics; Political ecology; Ownership and intellectual property rights; Codes of conduct. <b>(8 hours)</b>

Course code ER — 304	Course name: <b>Ecological Economics and Sustainable Development</b> <b>Marks= ES 60</b> <b>IS 15</b> <b>Total= 75 Credit 3Total hours - 40</b>
Unit — I	Ecological Economics: introduction, organizing laws and principles, Motivation and historical roots of ecological economics; Concepts and tools of economics. <b>(8 hours)</b>
Unit II	The link between ecosystems and the economy : co-evolution and evolutionary economics; Comparative Value Theories : Classical,. neoclassical, and biophysical. <b>(8 hours)</b>
Unit – III	Evaluation of Ecosystem Services : contingent evaluation, travel cost, hedonic pricing; Energy theory of value. <b>(8 hours)</b>
Unit – IV	Stability indicators natural Resource Scarcity; Malthus, Ricardo, Barnet and Morse - Neoclassical approach; Welfare indicators; Multicriterial management of natural Resources. <b>(8 hours)</b>
Unit — V	Sustainable development : historical background; Machine world paradigm; Scientific world paradigm; Machine management in entropy; Sustainable goals and guidelines; Progress indicators; Sustainable natural resources and Policy; Forest Certification. <b>(8 hours)</b>

4. Management: problem solving and decision making; Organisation structure and design; Control processes.

#### **EM – 204: ENVIRONMENTAL LAW AND MANAGEMENT**

1. **Environmental Laws:** Evolution and development of International Environmental laws with reference to Stockholm Conference, Nairobi Declaration, Rio Conference, Rio+5 and the Rio+10; Global environmental issues and International laws to control Global warming, Ozone depletion, Acid rains, hazardous waste; Role of UN authorities in protection of Global Environment
2. **Environmental laws in India:** Legal, administrative and constitutional provisions for environmental protection in India; Statutory protection of the Human Environment - Factories Act, Motor Vehicle Act, Hazardous Waste legislation for pollution abatement; Anti Pollution Acts - Water Act. 1974 & 1977 (CESS), Air Act 1981, Environment Protection Act, 1986, Wild life protection act 1972 as amended 1991; forest conservation act, 1980; Indian forest act (revised) 1982
3. **Environmental Policies and Strategies:** Evolution of environmental policy and major policy parameters; role of regulatory agencies; role of NGO's; public participation for environmental management role of court and appellate authorities in environmental protection, national and international conventions.
4. **Sustainable development:** Concept and growth of the idea of sustainable development, indicators of sustainability, models of sustainable development  
Environmental resources – renewable and non-renewable; Economic development and resource use - natural resource accounting; integrating economic and environmental accounts, depletion of natural resources, defensive expenditure; Evolution of life cycle analysis (LCA); life cycle inventory and methodology with case study.
5. **Ecosystem Management:** Ecosystem analysis, modeling, monitoring and planning; Ecotourism and heritage management; Eco-restoration  
Environmental management of water, forest and biological resources; Wild life population pattern, Range and habitat, Endangered and rare species
6. **Environmental management of industrial pollution:** Management of pollution due to chemical, mining and manufacturing industries (petroleum, coal, cement, paper, fertilizer).
7. **Pollution Prevention and Total Environmental Quality Management** Environmental indicators; Pollution prevention methodology; Methods for waste minimization; Types of recycling; Recycling of waste material; Recovery effort index; ISOTC-207 standards; Environmental audit; ISO 14000 series and environmental labeling.

#### **Recommended Books**

1. Sustainable development (Vol. I & II): N. L. Gupta and K. K. Gurjar (ed); Rawat Publications
2. Environmental management: G. N. Pandey; Vikash Publishing House
3. Environmental management: H. M. Saxena; Rawat Publications
4. Environmental Law and Policy in India: S. Divan & A. Rosencranz; Oxford University Press
5. Environmental Management – Physio-ecological facets (Vol. I & II): Rai, Mohapatra & Goel (ed); Rawat Publications
6. Environmental Management in India Vol. I & II): R. K. Sapru; Ashish Publishing House
7. Steven L. Erickson & Brian J. King, Fundamentals of Environmental Management, John Wiley & Sons, New York, 1999.

8. S.N. Charry & Vinod Vyasulu, Environmental Management, An Indian Perspective, Macmillan India Ltd., 2000.
9. Marry Ann Curran, Environmental Life-Cycle Assessment, McGraw Hill, New York, 1996.
10. Chirstopher Sheldon and Mark Yoxon, Installing Environmental Management Systems, Earthscan, London, 1999.

#### **EM – 205: Practical II and Fieldwork**



4. **Analysis of Metal Ions:** Colorimetry and Spectrophotometry – theory and instrument Theory, instrumentation and application of Atomic Absorption Spectrometry, Flame Emission Spectrometry and Inductively Coupled Plasma Mass Emission Spectrometry
5. **Separation Techniques:** Principle and process of solvent extraction, Extraction reagents; Practical applications; Chromatography – principle and application of thin layer and exchange chromatography
6. **Chromatography:** Gas-Liquid and Ion chromatography - Principle, instrumentation applications, GC-MS, Anode Stripping Voltametry and Neutron activation analysis
7. **Nephelometry and Turbidimetry:** General discussion, Instruments for nephelometry turbidimetry and their applications

**Recommended Books**

1. Standard Methods for Examination of water and waste water : A. E. Greenberg, A. D. Eaton APHA, AWWA, WEF
2. Chemistry for Environmental Engineering and Science : C. N. Sawyer, P. L. McCarty and G Parkin
3. Laboratory Manual for the Examination of Water, Waste water and soil : H. H. Rupa and H. Krist; V C H Publication

**EM – 203: MANAGEMENT PROCESS & ORGANIZATIONAL BEHAVIOUR**

1. **Introduction to Management:** Meaning and nature of management; Managerial functions roles and skills; Evolution of management thoughts; Social and ethical responsibilities management
2. **Management Planning and Organizing:** Planning process - objectives and strategies; Policies and planning premises; Managerial decision-making Fundamentals of organizing; Strategic organization design; Line and staff authority and decentralization; Effective organizing organizational culture
3. **Staffing, Leading and Controlling:** Human resource management and staffing; Performance appraisal and career strategy; Organizational change and organization development and the human factor, Motivating employees for job performance communications  
The control function, Control techniques, Productivity and operations management, control versus preventive control, Management information systems
4. **Fundamentals of Organizational Behavior:** Understanding organizational behavior; Foundations of human relations and organizational behavior, Understanding people organizations, Diversity and ethics, Interpersonal and organisational communication; Managerial communication; Individual behavior in organizations - Personality and attitudes, Motivation Perception, Learning
5. **Dynamics of Organizational Behavior:** Leadership, empowerment and participation; Conflict negotiations and inter-group behavior; Management of conflict; Foundations of group behavior; Understanding work teams; Informal organizations
6. **The Organization System:** Foundations of organization structure; Decision making; Power politics; Organizational culture
7. **Organizational Change and Organization Development:** Organizational change; Fundamentals of organization development, Organization development interventions, Future organizational development

**Recommended Books**

1. Ancona et. al., Organisations Behaviour Processes: South-Western College Publishing USA, 1999.

## IV SEMESTER

### ANT-SE-4014 : Public Health and Epidemiology

**COURSE OBJECTIVE:** To provide an understanding of the anthropological dimension of health.

**COURSE OUTCOME:**

The students will learn different aspects of health, diseases and principles of epidemiology.

**Unit I: Principles of Epidemiology in Public Health:**

Overview of epidemiology methods used in research studies to address disease patterns in community and clinic-based populations, distribution and determinants of health-related states or events in specific populations, and strategies to control health problems

**Unit II: Statistical Methods for Health Science**

Analysis and interpretation of data including data cleaning, data file construction and management; implementation of analytic strategies appropriate for the type of data, study design and research hypothesis; parametric and nonparametric methods, measures of association, Linear and Logistic regression, Generalized Linear Modeling, and Survival analysis

**Unit III: Environmental Health**

Effects of biological, chemical, and physical agents in environment on health (water, air, food and land resources); ecological model of population health; current legal framework, policies, and practices associated with environmental health and intended to improve public health

**Unit IV: Psychological, Behavioural, and Social Issues in Public Health**

Cultural, social, behavioural, psychological and economic factors that influence health and illness; behavioural science theory and methods to understanding and resolving public health problems; assess knowledge, attitudes, behaviours towards disease and patient compliance to treatment.

**Unit V: Management of Health Care Program and Service Organizations**

Techniques and procedures for monitoring achievement of a program's objectives, generating evidence of program effectiveness, assessing impacts in public health settings; evaluate framework that leads to evidence-based decision-making in public health. Organizational principles and practices including organizational theory, managerial role, managing groups, work design, and organization design at primary, secondary, and tertiary levels of care

**Unit VI: Epidemiology of disease**