

Course Code	Course Name	Credits
26RD601	Natural Resources Management	04

Course Objectives

- To understand different approaches and paradigm of the resources management
- To understand the role of natural resources management in conserving the nature or ecosystem of the environment.

Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

- Define and classify different types of natural resources, understand the factors influencing their availability, and analyze the interrelationships among resources, with a focus on the economic benefits derived from ecosystems like forests, mountains, minerals, land, and water.
- Examine the concept of livelihood and its relationship to natural resources, with a focus on indigenous communities, traditional livelihoods, and the socio-economic and ecological impacts of resource crises, globalization, urbanization, privatization, migration, and climate change.
- Understand and evaluate the evolution of resource management paradigms from pre-industrial, colonial, to post-colonial periods, and apply different philosophies like Frontier Economics, Deep Ecology, Environmental Protection, and Eco-development to resource management.

Unit 1 – Introduction to Natural Resources and Resource Management (13 hrs)

Concept of natural resource, Type and classification of natural resources, Factors influencing resource availability, Interrelationships among different types of natural resources, Direct and indirect economic benefit from – forest ecosystems, mountain ecosystems, mineral, land and water resources; Resource management, Key concept of resource management-Resource allocation, resource development, resource conservation

Unit 2 –Livelihood and Natural Resource (12 hrs)

Concepts and scope of livelihood, livelihood framework analysis, indigenous communities and traditional livelihoods, forms of natural resources and dependencies of local people, natural resource crisis impacts on the livelihood of people-ecological, socio-cultural and economic dimensions, threats of traditional livelihood from globalization, urbanization, privatization, and migration, climate change impacts

Unit 3 - Resource Management Paradigm (12 hrs)

Evolution of resource management paradigms,- Pre Industrial or pre colonial, Industrial or Colonial Period, Post-industrial or Post -colonial Period; Different philosophy of paradigms: Frontier Economics, Deep Ecology, Environmental Protection, Resource Management, Eco-development

Unit 4 – Approaches in Resources Management (11 hrs)

Approaches in Resource Management: Ecological Approach, Economic Approach, Behavioral Approach, Integrated Approach, Institutional Approach, Community Based Approach, Technological Approach; Implications of the approaches

Unit 5 – Resources Governance and Policy (12 hrs)

National Forest Policy of 1988, National Environment Policy of 2004, National Conservation Policy, National Action Plan on Climate Change of 2008, Coastal Protection Act. Wildlife Protection Act of 1972, Water Act, 1981, Biological Diversity Act of 2002, Forest Rights Act of 2006, Green Tribunal Act, 2009

Reference:

1. D. R. Lynch, Sustainable Natural Resource Management: For Scientists and Engineers, Publisher: Cambridge University Press, 2009.
2. Francois Ramade 1984. Ecology of Natural Resources. John Wiley & Sons Ltd.
3. G. Shivakoti, U. Pradhan, H. Helmi (editors), Redefining Diversity and Dynamics of Natural Resources Management in Asia, Volume 1st Edition, Sustainable Natural Resources Management in Dynamic Asia, Editors:, ISBN: 9780128054543, Elsevier, 2016.
4. Knight, Richard L., editor, et al. 1995. A New Century for Natural Resources Management. Island Press
5. M.C. Dash, Concepts of Environmental Management for Sustainable Development Publisher: I K International Publishing House Pvt. Ltd., 2013.
6. P. Rogers, K. F. Jalal, J. A. Boyd, An Introduction to Sustainable Development. Publisher: Routledge; 1 edition, ISBN-10:1844075206, 2007.

COs and Bloom's Taxonomy Level (BTL) Mapping

COs and Bloom Taxonomy Mapping-26RD601		
Course Outcomes	On successful completion of this course, students will be able to	BTL
CO1	Will grasp the concept of natural resources, classify different types, and analyze factors influencing their availability. They will explore the interrelationships among various natural resources and evaluate the direct and indirect economic benefits derived from forest ecosystems, mountain ecosystems, minerals, land, and water resources. Additionally, they will demonstrate an understanding of resource management principles, including resource allocation, development, and conservation..	K1, K2
CO2	Apply resource management strategies to address contemporary environmental challenges, utilizing interdisciplinary approaches to balance ecological preservation, economic development, and societal needs.	K3
CO3	Analyze key national policies and acts related to resource governance including the National Forest Policy of 1988, National Environment Policy of 2004, National Conservation Policy, National Action Plan on Climate Change of 2008, Coastal Protection Act, Wildlife Protection Act of 1972, Water Act of 1981, Biological Diversity Act of 2002, Forest Rights Act of 2006, and Green Tribunal Act of 2009. They will evaluate the implications of these policies on natural resource management and conservation efforts	K4
CO4	Evaluate various approaches in resource management including the ecological approach, economic approach, behavioral approach, integrated approach, institutional approach, community-based approach, and technological approach. They will assess the implications of each approach in terms of sustainability, effectiveness, and societal impact.	K5
CO5	Propose innovative and sustainable solutions for resource management, integrating knowledge of natural resource dynamics, policy frameworks, and governance structures to promote environmental stewardship and community resilience	K6

BTL: K1 and K2- Remembering and Understanding, K3- Applying, K 4- Analyse, K5- Evaluate and K 6 – Create

Relationship Matrix-26RD601													
Course Outcomes	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)					Mean Score of COs	
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	
CO1	3	3	3	3	3	2	3	3	2	3	3	2	2.7
CO2	3	3	3	3	2	2	3	3	2	3	2	2	2.5
CO3	3	3	3	3	3	2	3	3	3	3	2	2	2.7
CO4	3	3	3	3	2	2	3	3	3	2	2	2	2.5
CO5	3	3	2	3	3	2	3	3	2	3	3	2	2.6
Total													2.6

Mean Score: 3- High, 2- Medium/Moderate, 1-Low