

About the course

This course provides a comprehensive study of mangrove ecosystems, emphasizing the increasing concern over plastic pollution within the unique context of India's coastal areas. The text starts with an overview of mangroves, elucidating their distinctive biological adaptations and worldwide distribution, while differentiating among various species and structural forms. It subsequently explores the biological functions of mangroves, emphasizing their significance in coastal defense, biodiversity enhancement, and carbon sequestration, while also confronting region-specific concerns such as urbanization and tourist pressures in India. The course comprehensively investigates plastic pollution—its varieties, origins, and durability—prior to evaluating its direct and indirect effects on mangrove ecosystems, sea organisms, and surrounding populations. Students will examine current conservation strategies, community-led initiatives, and case studies from significant mangrove regions such as the Sundarbans and the Andaman & Nicobar Islands.

Learning Objectives

- To emphasize the connection between mangroves and climate change mitigation, as well as the detrimental impact of plastic pollution on that function
- To encourage learners to identify plastic waste sources affecting mangrove ecosystems, such as fishing gear, packaging, and tourism.
- To elucidate the ideas of bioaccumulation and microplastics in mangrove ecosystems
- To advocate for community-driven initiatives, including eco-clubs, clean-up campaigns, and localized waste management strategies
- To foster critical thinking on policy, conservation, and individual vs. communal action
- To educate learners about mangroves' value for biodiversity and coastal protection.
- To link mangrove protection with sustainable development goals (SDGs) such as life below water, climate action, and responsible consumption

Target Audiences

- Educators & Academic Researchers
- Policymakers & Government Officials
- Conservationists & Ecologists
- Coastal Management Professionals
- NGOs & Community Leaders
- People who are interested in Mangroves Conservation.

Course Duration: 10-12 hours

Course Title - Roots of Sustainable Resistance: Fighting Plastic in Mangrove Habitats

Module 1 : Introduction to Mangroves

- 1.1 Definition and features of Mangroves
- 1.2 Distributions and types of Mangroves
- 1.3 Salt Exclusion Mechanism

Module 2 : Role of Mangroves Plants

- 2.1 Ecological Importance
- 2.2 Challenges in the Indian Context
- 2.3 Major Threats

Module 3 : Plastic Pollution

- 3.1 Understanding plastic pollution
- 3.2 Types of Plastic Pollution
- 3.3 Ways plastic reaches Mangrove Ecosystems

Module 4 : Impact of Plastic on Mangroves

- 4.1 Block roots and prevents growth
- 4.2 Harm to Wildlife
- 4.3 Chemical Pollution
- 4.4 Reduced Growth and Health of Mangroves
- 4.5 Disruption of Ecosystem Services
- 4.6 Aesthetic and Cultural Impact

Module 5 : Initiatives to Protect Mangroves in India

- 5.1 Government Policies and Rules
- 5.2 National and State Initiatives
- 5.3 Community and NGO efforts
- 5.4 Role of Citizen

Module 6 : Action Plans

- 6.1 Sundarbans Plastic Control Efforts – West Bengal
- 6.2 Mangrove Foundation – Maharashtra
- 6.3 Gujarat Coastal Village Campaigns
- 6.4 Goa – Plastic Pollution in Mangroves
- 6.5 Andaman & Nicobar Islands Eco-Sensitive Zones
- 6.6 Lakshadweep & Coastal Union Territories

References

Self-Assessment