

ST JOHN'S COLLEGE ANCHAL

PG & RESEARCH DEPARTMENT OF ENVIRONMENTAL SCIENCES

Add-On Course

The Department of Environmental Sciences is conducting the following Add on Course during the academic year 2022-2023 for UG and PG students of the college

WETLAND CONSERVATION AND MANAGEMENT

Course Duration: 30hrs

Eligibility: UG & PG Students

Date of Commencement

04-12-2022



Course Coordinator

Dr. Alexander T.

Wetlands play an important role in ecosystem functioning. Their management, governance and conservation however remain neglected not because of awareness but due to lack of capacity and complexities involved in their assessment of management needs. Wetlands categorized as Protected Areas in India are mostly governed by the Wildlife Protection Act of 1972. Biodiversity studies on aquatic eco systems are mostly restricted to a few charismatic fish species, aquatic plants, water birds which is an impediment to. This course on Wetland Management and Conservation shall focus on the needs and approaches to Wetland management and their conservation in India

For further queries please contact the Course Coordinator



ADD-ON COURSE (2022-2023)

Name of Course	Wetland conservation and management
Course Code	ENV.A21.1
Department offering the Course	Department of Environmental Sciences
Course Duration	30 Hours
Candidates	Will be of advantage to students who have studied Ecology/Biodiversity and Conservation
Faculty In Charge	Dr. Alexander T.

Course Title: ENV.A.23.1 : WETLAND CONSERVATION AND MANAGEMENT

Course Description:

Wetlands play an important role in ecosystem functioning. Their management, governance and conservation however remain neglected not because of awareness but due to lack of capacity and complexities involved in their assessment of management needs. Wetlands categorized as Protected Areas in India are mostly governed by the Wildlife Protection Act of 1972. Biodiversity studies on aquatic eco systems are mostly restricted to a few charismatic fish species, aquatic plants, water birds which is an impediment to. This course on Wetland Management and Conservation shall focus on the needs and approaches to Wetland management and their conservation in India.

Course objectives

1. To understand the ecology of the wetlands and their contribution to human well-being.
2. To develop hands on ability to undertake biodiversity monitoring of wetlands.
3. To develop an ability to understand issues related to best practices in Wetland Management and conservation.
4. To be able to prepare a management plan for wetland conservation.





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Course content

Affiliated to the University of Kerala
Re-accredited with Grade B NAAC
Recognised for STAR College by DBI, Govt. of India

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Modules	Topic	Content	Duration
Module 1:	Basic Concepts on Wetland Ecology	Definition and classification of Wetlands: Wetlands as Ecosystems and part of River Basin. Distribution and typology. Wetland Habitat and Ecology. Physico-chemical parameters Hydrology and Soils.	2
Module 2:	Wetland diversity and functions	Biodiversity in Wetland Systems: Aquatic Organisms: Microbes, Phytoplankton, zooplanktons, Plants Invertebrates and Vertebrates. Wetland Functions and Values; Ecosystem services. Nutrient cycling in aquatic systems. Productivity, trophic states and eutrophication. Freshwater ecosystems	2
Module 3:	Importance of Wetlands	Conservation: Biodiversity, Flood control, Water pollution Benefits of Wetlands Conservation: Biodiversity Conservation and habitat creation; Water purification and filtration; Flood prevention and Erosion control; Climate Regulation and Carbonsequestration; Recreational and educational opportunities	2
Module 4	Wetland Conservation Methods	Regulation and legislation; Restoration and creation; Monitoring and Research; Public education and Awareness; Community development.	2
Module 5	Threat analysis and management	Planning: Natural and Human impacts; major threats to wetlands; Setting management objectives and priorities.	2





Module 6:

Key aspects of Wetland management planning:

Preparing a Management Plan. Collating baseline information using assessment tools, approaches to assessment of aquatic biodiversity. Management for migratory water fowl, fisheries, amphibians, reptiles and mammals. Management of aquatic weeds. Monitoring of Wetlands. Managing hydrology; Control of Siltation and Pollution. Involvement of local communities in conservation of Wetlands.

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Module 7

Wetland Conservation in India and the World

Wetlands in India: Wetlands of Ramsar significance in India; Wetland policy. National Wetland Rules 2010. Wetland related Institutional arrangements: Functioning of Lake Development Authorities. Transboundary waters
Major Wetlands of the World: Ramsar Convention; Wetland conservation vis a vis other Conventions (CBD, CMS, CITES, UNFCCC). Conservation issues of major wetlands of the World.

2

Module 8

Wetlands of international or national importance in Kerala:

Detailed study on Ramsar sites in Kerala – Vembanad Kol; Ashtamudi Lake; Sasthamkotta fresh water Lake; A case study on Vembanad wetland ecosystem

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Module 9

Steps in Wetland Restoration

Assessing the site and identifying restoration goals; Removing barriers and restoring hydrology; Re-establishing native vegetation; Monitoring and Adaptive Management.

2

Module 10

Field study on revival and restoration of Wetlands

Field visit to a Wetland in Kerala (Vembanad Kol /Ashtamudi/ Sasthamkotta / Any other significant Site): to study restoration and revival efforts. In field lectures. Presentations on the assignment. Submission of the report.

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Learning outcomes

Student undertaking this course will develop an understanding of values and functioning of Wetland Ecosystems and different aspects of Wetland management planning that will aid governance. Will be useful to students aspiring higher studies and career paths that involves assessment of aquatic biodiversity and governance of Wetland management.

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Reference

- Gopal B. (1995). *Handbook of Wetland Management.*, World Wide Fund for Nature India. NewDelhi (Revised Edition being planned by author)
- Wetzel, Robert G and (2010). *Limnological analysis.* Springer Science. New York. USA
- Wetzel Robert G. .2001. *Lake and river ecosystems.* Elseiver. Academic Press. USA.

Course Coordinator

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