

**Department of Environmental Science
Tezpur University
Course-Plan**

School of Sciences

Department of Environmental Science

Course Code: ES 547

Course title: Agroforestry & Forest Management

L -2 T- 0 P-0 CR-2

**Name of Instructor: Dr. Ashalata Devi
Dr. Shanta Kalita**

Abstract:

The course highlights the key aspects of the role of forests, trees on farms and agroforestry in providing food security, nutrition and livelihoods in several ways, including as a direct source of food, fuel, employment and cash income, and are important providers of ecosystem service. Studying various aspects of structure and function of forest ecosystem will improve the understanding of the comprehensive and dynamic interrelationship between management of social-economic conditions and climatic changes.

Objective:

1. To learn the structure and function of forest and different agroforestry ecosystem.
2. Evaluation of community's role and participation in forest conservation and management.
3. To understand the wasteland and restoration techniques.

Prerequisites of the course:

Basic knowledge of forestry and ecology at undergraduate level.

Course outline+ Suggested reading:

Agroforestry and socioeconomic aspects.

Microclimate of forest ecosystem, tree physiology, growth, forestation for waste land recovery, deforestation and its impact on environment, agri, horti, silvicultural ecosystem.

Principles of forest management, rotation, kinds of rotation, community and joint forest management, traditional forest management.

Text Books :

1. Singh M. P. and Tewari D.N., Agro-forestry and Waste Land, Anmol Publication, 1996
2. Dwivedi A. P., A Text book of Silviculture, International Book Distribution, 1993
3. Dwivedi A.P., Agro-forestry - Principles and Practices Oxford and IHB, 1992
4. Sagwal S. S., A text book of Silviculture, Kalyani Publishers, 2006

Reference Books :

1. Gadgil, M. and Guha, R.(2000). The use and abuse of Nature, Oxford University Press.
2. Singh, P. et al (edtrs.).(2004). Agro-forestry Systems for Sustainable Land Use, Science Publisher.
3. Wojtkowski, P. A.(2004). Theory and Practices of Agro-forestry Design, Science Publisher

4. Wojtkowski, P.A.(2004). Agroecological Perspectives in Agronomy, Forestry and Agro-forestry, Science Publisher.

Pedagogy:

Lecture method, Group discussion, Assignment, Presentation, Interactions

Time-Plan of the course:

Lecture no.	Content/Learning unit
1 L	Agroforestry and Socioeconomic Aspects: General concepts of Agroforestry, Definition of agroforestry
1 L	Advantages of agroforestry, agroforestry systems.
1 L	Socioeconomic classification of agroforestry
1 L	Microclimate of Forest Ecosystem: Environmental variables; temperature, light, etc. Gap,
1 L	Importance and influence of microclimate in forest ecosystem.
2 L	Tree Physiology and Plant growth: Functions of the principal areas of tree, Growth; conditions necessary for growths
1 L	Factors affecting the growth in trees in terms of diameter and height, growth regions/phase of growth.
2 L	Forestation for waste land recovery: General concept of wasteland, definition of wasteland, NWDB, Classification of wasteland.
2 L	Technology for development of wastelands, afforestation and rehabilitation/reclamation of wastelands.
2 L	Deforestation and its impact on environment: Major forest types of India, classification of forest on different basis.
2 L	Consequence of forest, important causes of deforestation, impact of deforestation on environment.
2 L	Agriculture, Horticulture and silvicultural Ecosystem: Indian agriculture, Green Revolution, some features of Indian agriculture, sustainable agriculture and agriculture in northeast India.
1 L	Growth of horticulture, integrated development of horticulture in NE India, important horticultural crops of NE region.
1 L	Objectives of silviculture, silviculture and forest management.
2 L	Principles of Forest Management, Rotation and kinds of rotation. Principles of Forest Management
1 L	Rotation and kinds of rotation
2 L	Community and Joint Forest Management, Traditional Forest Management: History, Origins and current status.
1 L	Typical examples of Traditional Forest managements in Indian and in NE region, in particular.

26 hours

Evaluation plan

Performance of student is evaluated on the basis of continuous assessment.

Evaluation

Evaluation method	Marks
Test I	10
Mid Term Examination	30
Test II (Assignment/Presentation)	10
End Term Examination	50

Total: 100

Expected outcome:

Students will be able to apprehend the functional response of tree species composition affected by micro- and macro environmental conditions. They will also be able to critically examine the participation and role of community for the management and conservation of forest with due awareness of deforestation in large scale.