

## Syllabus for B.Sc. (Hons) Agriculture Year – III (Sem. V)

**Subject Code:** 16AS0514

**Subject Short Name:** Agron. 5.8

**Subject Name:** Introductory Agro forestry

### Objective:

1. To study Agro forestry as an alternate system of land use
2. To study different types of Agro forestry for soil and water conservation
3. To study the characteristics of Agro forestry in terms its potential for soil moisture conservation practices

**Credits Earned:** 2 Credits (1+1)

**Course Outcomes:** After completion of this course, Students will be able to

- Understand the definition, scope, and types of agroforestry systems in India.
- Analyze tree-crop interactions, ecological aspects, and biodiversity conservation in agroforestry.
- Evaluate the role of agroforestry in soil and water conservation, windbreaks, and shelterbelts.
- Learn propagation, nursery management, and silvicultural practices for important tree species.
- Develop practical skills in agroforestry system design, planting patterns, and field evaluation.

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Progressive Assessment (PA)	Viva (V)	Term work (TW)	
1	0	2	2	40	20	20	10	10	100

### Theory Content:

Unit	Topics	Contact Hours
1	Agro-forestry: Definition and scope of Agroforestry system	1

2	Type of Agroforestry system, potential of Agroforestry and prevailing agroforestry system in India	1
3	MPTS- definition, role of MPTS in agroforestry system and its selection for different agroforestry system	1
4	Ecological aspects of Agroforestry system, tree -crop interaction, competition and nutrient recycling	1
5	Traditional Agroforestry as a viable choice to conserve Agro biodiversity of India	1
6	Management of Agro-forestry system; Role of agroforestry in soil and water conservation	1
7	Windbreak and Shelterbelt– definition and objectives	1
8	Socio- economic aspects of Agroforestry system & Design and diagnostic study of agroforetry system	1
9	Silviculture: Definition and scope, Propagation of tree species, Regeneration by seed, coppice, root suckers, Transplanting, stump, branch cutting, rhizomes	1
10	Concept of herbicide mixture and utility in agriculture, Herbicide compatibility with agro-chemicals and their application, Herbicide resistance and its management	1
11	Nursery bed preparation and management	1
12	Management of tree species; Silviculture of important tree species, choice of species- site factors, root, crown and bole characteristics, phenology, nutritional and water requirement, ground operation, tending, harvesting utility etc.	1
13	Horticulture and forage crops-based agroforestry models developed by ICAR-IGFRI and Agroforestry models developed by Indian council of Forestry Research and Education.	1
	<b>Total</b>	<b>13</b>

**Practical Content:**

Unit	Topics	Contact Hours
1	Identification of tree species in agro-forestry	2
2	Study of tree growth measurement and environmental parameters affecting AF System	2
3	Plant propagation methods, Pre-sowing seed treatment and Preparation of nursery bed	2
4	Practicing propagation techniques for trees and afforestation method, practical training, pruning, coppicing, pollarding etc.	2
5	Planting pattern, designs for plantation, natural and artificial regeneration	2
6	Design and diagnostic survey of agro-forestry system	2
7	Weed control implements	2
8	Evaluation of agro-forestry system in different agro climatic zones	2
9	Exposure Visit to prevailing agroforestry systems of the state and related important institutions	2
10	Virtual visit of agroforestry models developed by ICAR-IGFRI, ICFRE	2
	<b>Total</b>	<b>20</b>

**Reference Books:**

- Nair, P.K. R. 1993. An Introduction to Agroforestry, Kluar Academic Publisher.
- Chundawat D. S. and S.K. Gautham. 2017. Textbook of Agroforestry. Oxford & IBH Publishing, (ISBN: 9788120408326).
- Parthiban, K. T, N. Krishnakumar and M. Karthick. 2018. Introduction to Forestry, Scientific Publisher, Jodhpur. 350p.
- Divya M. P. and K. T. Parthiban. 2005. A Textbook on Social Forestry and Agroforestry. Satish Serial Publishing, New Delhi (ISBN: 9384988952).

### **Suggested Theory distribution:**

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process.

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
25%	25%	20%	10%	10%	10%

### **Instructional Method:**

1. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by white board may also use any of tools such as demonstration, role play, quiz, brain storming, MOOCs etc.
2. The internal evaluation will be done on the basis of continuous evaluation of students in the class-rooms.
3. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory/ field.
4. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.