

Course code	Course Title	C	H	I	E	T
17P3BME1	FORESTRY AND ECONOMIC BOTANY	5	6	25	75	100

Objectives:

1. To understand the various concepts and procedures of forestry
2. To prepare students to face competitive exams.

Learning Outcome:

Ensured minimum requirement of forest covers on the earth by either grooming students to take part in the NGOs or as implementing officers in forest department.

UNIT - I (20hr)

Introduction- Forests: definitions and types in India. Afforestation, reforestation and regeneration. Silviculture: General principles; physical, physiological and ecological factors influencing vegetation. Natural and artificial regeneration of forests; Nursery beds, polybags, water budgeting, grading and hardening of seedlings, establishment and tending.

Systems: Clear felling, uniform shelter wood selection, copices and conversion systems. Management of temperate and subtropical forests with reference to choice of species, enrichment methods, intensive mechanized methods, aerial seeding and thinning.

UNIT- II (20hr)

Mangrove and cold desert characteristics and management of species. General concept of tree improvement methods and techniques. Traditional and recent advances in tropical silvicultural research and practices. Silviculture of *Casuarina equisetifolia* and *Tectona grandis*.

UNIT- III (20 hr)

Agroforestry and Social / urban forestry: Objectives, Scope, necessity, selection of species and utilisation as food, fodder and fuel security. Watershed management.

Forest management: Objectives, principles and techniques. Stand structure and dynamics, sustained yield and regulation of yield. Site-specific planning and strategic planning, monitoring and governance. A brief account on forest working plan. Impact of forest fires, human activities like mining, construction and developmental projects. Forest protection against fire, insects-pests and landslides. A brief account on tribology and participation of tribes on forestry programmes.

UNIT-IV (20hr)

Forest utilization and Legislation: Direct and indirect benefits of forests; Timber and Non-Timber forest produces (NTFPs). Timber: Forest harvesting practices, logging and extraction principles and techniques. Wood seasoning, storage and sale. General account on plywoods, pulp-paper and rayon. NTFP's: gums, resins, oil seeds, bamboos and medicinal plants.

Forest Laws, necessity and general principles. Indian Forest policy of 1894, 1952 and 1990. National forest policy, 1988; Indian Forest Act, 1927, Forest conservation Act, 1980; Wildlife protection Act, 1972. Biological diversity act, 2002; national biodiversity authority rules, 2003.

UNIT V(10hr)

Economic botany:- Botanical name, Tamil name, English name, Family, morphology of the useful parts and uses of the following:

1. Cereals: paddy, pearl millet and finger millet.
2. Pulses: pigeon pea, cow pea and black gram.
3. Nuts: Almonds, Cashew and ground nut.
4. Vegetables: Root: Tapioca, radish & carrot.
Stem: potato, onion & tomato
5. Fruits: Mango, sour orange & guava.
6. Fibres: Cotton, flax and jute
7. Wood: Teak, Indian rosewood & Red sandalwood
8. Fatty oils : Sunflower, gingely & coconut
9. Essential oils: Sandal wood, khus & eucalyptus.
10. Spices & condiments: Pepper, cardamom & chilli.
11. Beverages: non -alcoholic: Coffee, tea & cocoa

REFERENCES:

1. Sagreiya, K.P. 1967. Forest and Forestry 1967, National book trust, India.
2. Negi, S.S. 1966. Hand book of forestry. International book distributors, New Delhi.
3. Negi, S.S. 1988. Elements of general silviculture. International book distributors, New Delhi.
4. Sageriya, K.P. 1982. Forests and Forestry. National book trust, New Delhi.

5. Gupta, R. 2018 Popular master guide, Indian forest service, Forestry paper I & paper II, Main guide Edition.
6. Bala kathiresan, S. Essential of forest management, Natraj publishers, Dehradun.
7. Pandey, B.P. 1978. Economic botany. S. Chand & company Ltd, New Delhi.
8. Verma.V.2009. Text book of Economic botany. Ane books Pvt. Ltd, New Delhi.
9. [https:// WWW.forestry.ubc.ca](https://WWW.forestry.ubc.ca)
10. <https:// WWW.botany.org>.

PRACTICALS

Forest mensuration & remote sensing: methods of measuring diameter, girth, height and volume of trees; yield calculation, forest cover monitoring through remote sensing; geographic information systems for management & modeling. Forest surveying, maps & map reading. Collection of plant products as per the syllabus.