

B.Sc. Forensic Science: Semester-II	
EST 208: Botany-II	
Teaching Scheme	Examination Scheme
Lectures: 3 hrs/Week	Class Test - 10 Marks
Tutorials: 1 hr/Week	Teachers Assessment - 5 Marks
Credits: 4	Attendance - 2 Marks
	End Semester Exam - 70 marks

**Course outcomes:**

After the completion of the course the students will be able to:

- Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms
- Understanding of plant evolution and their transition to land habitat.
- Understand morphology, anatomy, reproduction and developmental changes therein through typological study and create a knowledge base in understanding the basis of plant diversity, economic values & taxonomy of plants
- Understand the details of external and internal structures of flowering plants

**Unit I – Introduction to Archegoniatas, Bryophytes & Pteridophytes**

- Unique features of archegoniatas, Bryophytes: General characteristics, adaptations to land habit, Range of thallus organization. Classification (up to family), morphology, anatomy and reproduction of Riccia, Marchantia, Anthoceros and Sphagnum. (Developmental details not to be included). economic importance of bryophytes.
- Pteridophytes  
General characteristics, Early land plants (Rhynia). Classification (up to family) with examples. Heterospory and seed habit, stelar evolution, economic importance of Pteridophytes.

**Unit II – Gymnosperms & Palaeobotany**

- Classification and distribution of gymnosperms; Salient features of Cycadales, Ginkgoales, Coniferales and Gnetales, their examples, structure and reproduction; economic importance
- General account of Cycadofilicales, Bennettitales and Cordanales; Geological time scale; Brief account of process of fossilization & types of fossils and study techniques; Contribution of Birbal Sahni

**Unit III – Angiosperm Morphology (Stem, Roots, Leaves & Flowers, Inflorescence)**

- Morphology and modifications of roots; Stem, leaf and bud. Types of inflorescences; flowers, flower parts, fruits and types of placentation; Definition and types of seeds.

**Unit IV – Plant Anatomy**

- Meristematic and permanent tissues, Organs (root, stem and leaf). Apical meristems & theories on apical organization - Apical cell theory, Histogen theory, Tunica - Corpus theory. Secondary growth - Root and stem- cambium (structure and function) annular rings, Anomalous secondary growth - Bignonia, Boerhaavia, Dracaena, Nyctanthus

**Unit V – Reproductive Botany**

- Plant Embryology, Structure of microsporangium, microsporogenesis, Structure of megasporangium and its types, megasporogenesis, Structure and types of female gametophyte, types of pollination, Methods of pollination, Germination of pollen grain, structure of male gametophyte, Fertilization, structure of dicot and monocot embryo, Endosperm, Double fertilization, Apomixis and polyembryony

Head

Dean  
Faculty of Science

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