

COURSE: PLANT DIVERSITY- II
Course Code: BOT(N)-102

Syllabus

- History, distribution, economic and ecological importance and classification: (In Bryophytes) in accordance with the International Code of Botanical Nomenclature.
- Classification, structure and reproduction of Hepaticopsida: *Riccia* and *Marchantia*
- Classification, structure and reproduction of Anthocerotopsida: *Anthoceros* and *Notothylus*
- Classification, structure and reproduction of Bryopsida: *Funaria* and *Polytrichum*
- General features and classification of Pteridophytes: Telome theory, Stele system Heterospory, Life cycle.
- Morphology, anatomy and reproduction: *Selaginella* and *Rhynia*
- Morphology, anatomy and reproduction: *Equisetum* and *Adiantum*
- Morphology, anatomy and reproduction: *Marsilea* and *Azolla*
- General Characters, classification, economic importance and distribution of Gymnosperms in India
- Morphology, anatomy and reproduction: *Cycas*
- Morphology, anatomy and reproduction: *Pinus*
- Morphology, anatomy and reproduction: *Ephedra*
- Geological time scale
- Types of Plant fossils
- Process of fossilization
- Important fossils in India
- Birbal Sahani Institute of Palaeobotany

Unit Schedule

BLOCK-1: BRYOPHYTES

- Unit-01 : Habit, distribution, economic importance and classification according to International Code of Botanical Nomenclature (ICBN).
- Unit-02 : Classification, structure and reproduction in Hepaticopsida: *Riccia* and *Marchantia*
- Unit-03 : Classification, structure and reproduction in Anthocerotopsida: *Anthoceros* and *Notothylus*.
- Unit-04 : Classification, structure and reproduction in Bryopsida: *Funaria* and *Polytrichum*.

BLOCK-2: PTERIDOPHYTES

Unit-05 : General features, classification, telome theory, stelar system, heterospory and life cycle.

Unit-06 : Morphology, anatomy and reproduction of *Rhynia* and *Selaginella*.

Unit-07 : Morphology, anatomy and reproduction of *Equisetum* and *Adiantum* .

Unit-08 : Morphology, anatomy and reproduction of *Marsilea* and *Azolla*.

BLOCK-3: GYMNOSPERMS

Unit-09 : General characters, classification, economic importance and distribution of gymnosperms in India.

Unit-10 : Morphology, anatomy and reproduction of *Cycas*, *Pinus* and *Ephedra*

BLOCK-4: ELEMENTARY PALAEOBOTANY

Unit-11- : Geological time scale and Types of plant fossils

Unit-12- : Process of fossilization and Important fossils in India

COURSE: PLANT DIVERSITY- II (LABORATORY)

Course Code: BOT(N)-102L

Syllabus

- **Bryophytes:** Study of the external features, internal structure and reproductive structures with the help of permanent and /or temporary preparations of Bryophytes- *Riccia*, *Marchantia*, *Anthoceros*, *Notothylus*, *Funaria* and *Polytrichum*.
- **Pteridophytes:** Study of the external features and internal structures of rhizome, leaves, roots, sporangia and strobili of Pteridophytes- *Rhynia*, *Selaginella*, *Equisetum*, *Adiantum*, *Marsilea* and *Azolla*.
- **Gymnosperms:** Study of the morphology and anatomy of vegetative and reproductive parts of Gymnosperms -*Cycas*, *Pinus* and *Ephedra*.
- **Paleobotany:** Study of fossil specimens: impressions, casts and petrifications.

Exercise Schedule

- Exercise-01: To study the morphology, anatomy and reproductive structures in *Riccia*, *Marchantia*, *Anthoceros*, with the help of permanent and /or temporary preparations.
- Exercise -02: To study the external features, internal structure and reproductive structures of *Notothylus*, *Funaria* and *Polytrichum* with the help of permanent and /or temporary preparations.
- Exercise -03: To study the external features and internal structures of rhizome, leaves, roots, sporangia and strobili of Pteridophytes: *Rhynia*, *Selaginella*, *Equisetum*.
- Exercise -04: To study the external features and internal structures of rhizome, leaves, roots, sporangia and strobili of Pteridophytes: *Adiantum*, *Marsilea* and *Azolla*.
- Exercise -05: To study the morphology and anatomy of vegetative and reproductive parts of gymnosperms: *Cycas*, *Pinus* and *Ephedra*.
- Exercise -06: To study the fossil specimens: Impressions, casts and petrifications.