

**KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA  
UNIVERSITY, JALGAON**

**Faculty of Science and Technology**

**SYLLABUS FOR CORE AND SKILL ENHANCEMENT COUESES IN  
BOTANY**

**As Per U. G. C. Guidelines**

**Based on**

**Choice Based Credit System (CBCS)**

**T. Y. B. Sc. BOTANY SEMESTER - WISE SYLLABUS  
(Theory and Practicals)**

**SEMESTER - V**

**DISCIPLINE SPECIFIC COURSES**

**Bot. 501: Lower Cryptogams**

**Bot. 502: Morphology and Systematics of Angiosperms**

**Bot. 503: Cell biology and Genetics**

**Bot. 504: Plant Physiology and Biochemistry**

**SKILL ENHANCEMENT COURSE**

**Bot. 505: Biofertilizers**

**ELECTIVE COURSES**

**Bot. 506A: Analytical Techniques in Plant Sciences**

**Bot. 506B: Horticulture**

**PRACTICAL COURSES**

**Bot. 507: Practical - I: Based on BOT. 501 & BOT. 505**

**Bot. 508: Practical - II: Based on BOT. 502 & BOT. 506 A & BOT. 506B**

**Bot. 509: Practical - III: Based on BOT. 503 & BOT. 504**

**W. E. F. JUNE, 2020**

SEMESTER - V  
**PRACTICAL COURSES**  
**PRACTICAL PAPER - I**  
**BOT. 507: Based on Theory Paper - I & V**  
(BOT. 501 and BOT. 505)

**Practicals Based on Bot. 501: Lower cryptogams**

**Practical - 1 & 2:** Study of range of thallus structure in algae with the help of materials or Permanent slides (any one from the examples):

- a) Unicellular thallus: *Chlamydomonas*, *Chlorella*
- b) Colonial thallus: *Pandorina*, *Eudorina*, *Volvox*, *Hydrodictyon*
- c) Filamentous thallus: *Pithophora*, *Chaetophora*, *Coleochaetae*, *Stigeoclonium*,  
*Drapanaldia*, *Fritscheilla* and *Oedogonium*
- d) Siphonaceous thallus: *Vaucheria*, *Caulerpa*
- e) Pseudoparenchymatous: (Uniaxial/Multiaxial) thallus: *Batrachospermum*,  
*Polysiphonia*
- f) Parenchymatous thallus: *Ulva*, *Enteromorpha*

**Practical - 3:** Study of life cycle of *Chara*

**Practical - 4:** Study of life cycle of *Sargassum*

**Practical - 5:** Study of fungal forms (any four)

- i) *Stemonitis*      ii) *Saprolegnia*      iii) *Rhizopus*
- iv) *Eurotium*      v) *Puccinia*      vi) *Alternaria*

**Practical - 6:** Study of life cycle of *Albugo*

**Practical - 7:** Study of life cycle of *Uncinula*

**Practical - 8:** Culture of Algae (Venkatraman method)/Culture of Fungi on PDA medium

**NOTE:** Study tour is compulsory. Students are expected to submit two forms of Algae and Fungi each. Photographs of any two forms Algae and Fungi along with tour report.

**Practicals Based on Bot. 505: Biofertilizers**

**Practical - 9:** Diversity of BGA with the help of locally available specimens -  
*Nostoc*, *Anabaena*, *Oscillatoria*, *Gloecapsa* (Any three)

**Practical - 10:** Preparation of Yeast Extract Mannitol Agar Medium (YEMA Medium)

**Practical - 11 and 12:** *Rhizobium* culture with the help of healthy leguminous root nodules.

**Practical- 13:** Mass culture of BGA (Venkatraman method)

**Practical - 14:** Preparation of Compost, Farm Yard Manure (FYM).

**Practical - 15:** Study of Ectomycorrhiza and Endomycorrhiza with the help of PS/  
Photograph.

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**PRACTICAL PAPER - II**  
**BOT. 508: Based on Theory Papers - II and VI**  
(BOT. 502 and BOT. 506A/BOT. 506B)

**Practicals Based on Bot. 502: Morphology and Systematics of Angiosperms**

- Practical - 1:** Study of Leaf Morphology (as per theory): Phyllotaxy and Types of leaf
- Practical - 2:** Study of Inflorescences (as per theory)
- Practical - 3:** Study of Flower. Types of Flower and Forms of Corolla
- Practical - 4 to 6:** Study of **any six** plant families as per theory with respect to systematic position, morphological characters (vegetative and floral), floral formula and floral diagram (*sensu* Bentham and Hookers system)
- Practical - 7:** Identification of genus and species (any suitable) by using local, regional, state and national flora

**NOTE :** i) Excursion tour is compulsory  
ii) Submission of photograph of any ten plants and tour report at the time of practical examination.

**Practicals Based on Bot. 506 A: Analytical Techniques in Plant Sciences**

- Practical - 8 & 9:** Extraction and Separation of amino acids by paper chromatography
- Practical -10:** Isolation of chloroplasts by solvent method
- Practical - 11:** Study of different microscopic techniques light and fluorescence by using photographs
- Practical - 12:** Preparation of different types of stains (Permanent and temporary)
- Practical -13:** Preparation of permanent slides (double staining)
- Practical - 14 & 15:** Computation of mean, mode, median, variance and standard deviation from the given data.

**Practicals Based on Bot. 506B: Horticulture**

- Practical - 8:** Study of Garden tools and equipment: Sprayer, Duster, Pruning knife, Sprinkler.
- Practical - 9:** Study of propagation requirement:  
i) Media      ii) Containers      iii) Potting      iv) Repotting
- Practical - 10 & 11:** Study of propagation methods:  
a) Cutting      b) Layering      c) Budding      d) Grafting
- Practical - 12 to 15:** Preparations of different types of fruit products (Any three)  
a) Mix fruit Jam      b)Wood apple/Guava Jelly  
b) Lemon/Orange Squash      c)Tomato-ketchup

**Note:** Visit to any one Nursery Unit, Commercial orchard

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लेवा एज्युकेशनल युनियन संघटित  
डॉ. अण्णासाहेब जी. डी. बेंडाळे  
महिला महाविद्यालय, जळगाव

संलग्न : कवयित्री बहिणाबाई चौधरी  
उत्तर महाराष्ट्र विद्यापीठ, जळगाव (महाराष्ट्र)  
नॅक पुनर्मुल्यांकित 'अ' श्रेणी (३.१२ सी.जी.पी.ए.)  
(तिसरी फेरी), आय.एस.ओ.९००१:२०१५ मान्यंकित



Lewa Educational Union's

Dr. Annasaheb G. D. Bendale  
Mahila Mahavidyalaya, Jalgaon

Affiliated to Kavayitri Bahinabai Chaudhari  
North Maharashtra University Jalgaon (M.S.)  
NAAC Re-Accredited 'A' Grade (3.12 CGPA) (3<sup>rd</sup> Cycle).  
ISO 9001: 2015 Certified

Prof. Gauri M. Rane  
(M.Sc.Ph.D.)  
Principal

Department of Botany

Academic Year 2023-24

Name of the Activity: Excursion Tour

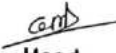
Date the Activity: 07/10/2023

Venue: Agricultural Research Centre, Pal, District Jalgaon

Brief Summary:

Department of Botany has organized a Botanical tour to Agricultural Research Centre, Pal, District Jalgaon. Fifteen students of first year, second year and third year Botany along with two faculty members visited the centre on 7<sup>th</sup> October 2023. During this visit students get very valuable information and practical training of various plant breeding techniques, tissue culture, vermi-composting and Mushroom cultivation. They also visited Green house where *in vitro* regenerated plants were kept for hardening. Students collected different forms of algae and aquatic fungi from *Suki* River. Students visited the orchards of sapota, custard apple, mango, etc.

Number of Participants: 15

  
Head  
Department of Botany  
Dr. Annasaheb G.D. Bendale  
Mahila Mahavidyalaya, Jalgaon







