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) Siphonaceousthallus: *Vaucheria*, *Caulerpa*

e) Pseudoparenchymatous: (Uniaxial/Multiaxial) thallus: *Batrachospermum*, *Polysiphonia*

f) Parenchymatousthallus: *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, FarmYard 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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Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon

Department of Botany

Academic Year 2023-24

Attendance of Excursion Tour (Visit to Agricultural Research Centre, Pal)

Class: T. Y. B.Sc. (BOT.-507, BOT 508) **Date: 07/10/2023**

Sr. No.	Name of the Students	Roll No.	Sign.
1.	Shital Subhash Shinde		Shinde
2	Chaudhari Aditi Arun		
3	Kawale chanchal Ganesh		
4.	Ashiyana Sagheer Kureshee		
5	Harshada Sunil Shelar		H.S. Shelar

लेवा एज्युकेशनल युनियन संचलित
डॉ. अण्णासाहेब जी. डी. बेंडाळे
महिला महाविद्यालय, जळगाव
संलग्न : कवयित्री बहिणाबाई चौधरी
उत्तर महाराष्ट्र विद्यापीठ, जळगाव (महाराष्ट्र)
नॅक पूनर्मूल्यांकित 'अ' श्रेणी (३.१२ सी.जी.पी.ए.)
(तिसरी फेरी), आय.एस.ओ.९००१:२०१५ मानांकित

Estd. : 1984

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) (3rd 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 7th 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


कृषि विज्ञान केंद्र,पाल (जळगांव-१)


महाराष्ट्र मुक्त विद्यापीठ, नाशिक
कृषि शिक्षण केंद्र
कृषि विज्ञान केंद्र