

GOVT. M. H. COLLEGE OF HOME SCIENCES AND
SCIENCE FOR WOMEN (AUTO.), JABALPUR (M.P.)

Department of Botany

UNDER GRADUATE

Session- 2023-24

Class- B.Sc. Ist Year

Course Type- Minor/Elective

Course Title- Paper-II (Basic Botany)

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24-7-23

Govt. M.H. College of Home Sc. & Sc. for Women, Jabalpur, M.P.

Session 2023 – 24

Botany

Syllabus Prescribed for the
Degree of Bachelor of Science in Botany

Part A Introduction

Program: Certificate		Class: B.Sc. I Year	Year: 2021	Session: 2021-22
Subject: Botany				
1	Course Code	S1-BOTA2T		
2	Course Title	Applied Botany (Paper 2)/अनुप्रयुक्तवनस्पति शास्त्र		
3	Course Type(Core Course/Elective/Generic /Elective/Vocational/....)	Core Course		
4	Pre-requisite(if any)	To study this course, a student must have had the subject Botany in Class/12 th /certificate /diploma.		
5	Course Learning outcomes (CLO)	<ul style="list-style-type: none"> • This course will help the student to understand the diversity of plants and evolutionary process in plant kingdoms. • It gives an account of plant adaptations from aquatic condition to colonize terrestrial habitat. • The changes in morphological, anatomical and reproductive structures that propel plant evolution can be investigated. • The economic importance and significance of plants in nature will be understood. • They will be acquainted with locally prevalent microbial diseases of plants and humans. 		
6	Credit Value	04 Credits		
7	Total Marks	Max. Marks: 30+70	Min Passing Marks: 35	

Part B-Content of the Course

Total No. of Lecture- 60Tutorials- 0 Practical- 0 (theory 4 hours per week):

L-T-P:

Unit	Topics	No. of Lectures
I	1.1 History of Botany and Indian Contributions. 1.2 Morphological Characteristics of lower and higher plants (Angiosperms). 1.3 Types of leaves, Inflorescence, Flowers and Fruits. 1.4 Structure of Plant cell and cell organelles, Prokaryotic and Eukaryotic cells, types of Cell division. 1.5 Microscope structure and function of light microscope (magnification and resolving power). 1.6 Various types of Microscopes: Bright field, Phase Contrast, SEM and TEM 1.1 वनस्पतिविज्ञानऔरभारतीय योगदान का इतिहास। 1.2 निम्नपादपऔरउच्चपादप (आवृत्तबीजी) की अकारिकी 1.3 पत्तियों के प्रकार, पुष्पक्रम, पुष्पऔरफल 1.4 पादपकोशिकाऔरकोशिकांगसंरचना-प्रोकैरियोटिकऔर	12

	<p>यूकेरियोटिककोशिकाएं।कोशिकाविभाजन के प्रकार।</p> <p>1.5 सूक्ष्मदर्शीसंरचनाऔरप्रकाशसूक्ष्मदर्शी का कार्य (आवर्धनऔरविभेदन क्षमता)</p> <p>1.6 विभिन्नप्रकार के सूक्ष्मदर्शी: ब्राइट क्षेत्रसूक्ष्मदर्शी, फेसकोनट्रास्ट, SEMऔर TEM</p>	
II	<p>1. Algae</p> <p>1.1 General Characteristics</p> <p>1.2 Range of Thallus organization, reproduction.</p> <p>1.3 Types of life-cycles in algae</p> <p>1.4 Role of algae in nature and its economic importance.</p> <p>2. Bryophytes:</p> <p>2.1 General Characteristics, Ecology</p> <p>2.2 Range of Thallus organization, morphology, anatomy (internal and external features) and reproduction of any on Bryophyte.</p> <p>2.3 Economic importance of Bryophytes</p> <p>1. शैवाल</p> <p>1.1 सामान्य विशेषताएं</p> <p>1.2 संगठनऔरप्रजनन</p> <p>1.3 जीवन-चक्र के प्रकार</p> <p>1.4 प्रकृतिमें शैवाल की भूमिकाऔरआर्थिकमहत्व</p> <p>2. ब्रायोफाइट्स</p> <p>2.1 सामान्य विशेषताएं</p> <p>2.2 पारिस्थितिकी, थैलससंगठन, अकारिकी, आंतरिकऔरबाहरीसंरचनाऔरकिसीभी एक ब्रायोफाइट्स का प्रजनन</p> <p>2.3 ब्रायोफाइट्स का आर्थिकमहत्व</p>	
III	<p>1. Pteridophytes</p> <p>1.1 General Characteristics and morphology</p> <p>1.2 Stelar organization and reproduction.</p> <p>1.3 Heterospory and seed habit</p> <p>1.4 Economical importance.</p> <p>2. Gymnosperms:</p> <p>2.1 General description and their distribution</p> <p>2.2 Economic importance of Gymnosperms</p> <p>3. Paleobotany</p> <p>3.1 Indian contribution in Paleobotany</p> <p>3.2 Brief knowledge of Fossils and Geological time scale.</p> <p>1. टेरिडोफाइट्स</p> <p>1.1 सामान्य विशेषताएंऔरअकारिकी</p> <p>1.2 रम्भ-तंत्र संगठनऔरप्रजनन</p> <p>1.3 विषमबीजाणुताऔरबीजस्वभाव</p> <p>1.4 आर्थिकमहत्व</p> <p>2. अनावृतबीजी</p> <p>2.1 सामान्य विवरणऔरवितरण</p> <p>2.2 आर्थिकमहत्व</p> <p>3. जीवाष्पीय वनस्पतिविज्ञान (पैलियोबोटनी)</p> <p>3.1 भारतीय योगदान</p> <p>3.2 जीवाश्मों का संक्षिप्तज्ञानऔरभूवैज्ञानिक समय सारणी</p>	

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IV	<p>1. Fungi</p> <p>1.1 General Characteristics and cell wall composition.</p> <p>1.2 Mode of nutrition.</p> <p>1.3 Types of reproduction</p> <p>1.4 Economic importance.</p> <p>1.5 Parasexuality and Mycorrhiza</p> <p>2. Lichens: Brief knowledge and their significance.</p> <p>1. कवक</p> <p>1.1 सामान्य विशेषताएं</p> <p>1.2 कोशिकाभित्ति की संरचना और पोषण का तरीका</p> <p>1.3 प्रजनन के प्रकार</p> <p>1.4 आर्थिक महत्व</p> <p>1.5 पैरासेक्सुअलिटी, कवकमूल</p> <p>2. लाइकेन और उनके महत्व का संक्षिप्त ज्ञान</p>	
V	<p>1. Microbes</p> <p>1.1 Brief outline of various types of Microbes</p> <p>1.2 Archaeobacteria, Eubacteria, Cyanobacteria, Mycoplasma, Actinomycetes and Virus.</p> <p>2. Beneficial and harmful roles</p> <p>1. सूक्ष्मजीव</p> <p>1.1 संक्षिप्त रूपरेखा</p> <p>1.2 सूक्ष्मजीवों के प्रकार, आर्किबैक्टीरिया यूबैक्टेरिया, साइनोबैक्टीरिया, माइकोप्लाज्मा, एक्टिनोमाइसेटीस और विषाणु</p> <p>2. लाभकारी और हानिकारक भूमिकाएं</p>	
<p>Keywords/Tags: History of Botany, Paleobotany, Prokaryotes, Eukaryotes, Algae, Bryophyta, Pteridophyta, Gymnosperms, Fungi, Mycorrhiza, Lichens, Bacteria, Virus</p>		
<p align="center">Part C-Learning Resources</p>		
<p align="center">Text Books, Reference Books, Other resources</p>		
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Oladele Ogunseitan, Microbial Diversity: Form and Function in Prokaryotes, Wiley Blackwell. 2008 2. Peleazar, M.J et al., Microbiology, Tata McGraw-Hill Co, New Delhi, 5th Edition, 2001 3. Prescott, L. Harley, J. and Klein, D., Microbiology, Tata McGraw-Hill, New Delhi, 6th edition, 2005. 4. Fritsch F.E., The Structure & Reproduction of Algae, Vol. I & Vol. II., Cambridge University Press, Cambridge, U.K. 1945. 5. Smith, G.M., Cryptogamic Botany, Vol. I: Algae, Fungi & Lichens, McGraw-Hill Book Co., New York, 1955. 6. Ian Morris, An Introduction to the Algae, Hutchinson, London, 1967. 7. Alexopoulos, C.J., Mims, C.W. and Blackwell, M., Introductory Mycology, John Wiley and Sons, 1996. 8. Webster, J., Introduction to Fungi, Cambridge University Press, 2nd edn., 1999. 9. Cavers F., The inter-relationships of the Bryophyte, The New Phytologist Indian Reprint, Vol.10, issue 1-2p.1-21, 1911 10. Parihar, N.S., An Introduction to Embryophyta: Bryophyte, Vol. I, Central Book Depot, Allahabad, 1965. 		

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- Top left: A signature that appears to be 'Rohit'.
- Top middle: A signature that appears to be 'Saurabh'.
- Top right: A signature that appears to be 'Abhishek'.
- Bottom left: A signature that appears to be 'Jai'.
- Bottom middle: A signature that appears to be 'Kishan'.
- Bottom right: A signature that appears to be 'Anshu'.

11. Watson, E.V., British Mosses and Liverworts, Cambridge University Press, Cambridge, U.K. 1968.
12. Eames, A.J., Morphology of Vascular Plants: Lower groups, McGraw-Hill Book Co., New York, 1936
13. Parihar, N.S., An Introduction to Embryophyta: Pteridophyte, Vol. II, Central Book Depot, Allahabad, 1965.
14. Sporn, K.R., The Morphology of Pteridophytes: The Structure of Ferns and Allied Plants, Hutchinson University Library, London, 1970.
15. Bierhorst, D.W., Morphology of Vascular Plants, The Macmillan Co., N.Y. and Collier-Macmillan Ltd., London, 1971.
16. Coulter, J.M. and C.J. Chamberlain, Morphology of Gymnosperms, Central Book Depot, Allahabad, 1964.
17. Sporne. K.R., The Morphology of Gymnosperms: The Structure and Evolution of Primitive seed Plants, Hutchinson University Library, London, 1971.
18. Dutta, S.C., An Introduction of Gymnosperms, kalyani Publishers, New Delhi, 1984.
19. Sharma, O.P. and Shivani Dixit, Gymnosperms, Pragati Prakashan, Meerut, 2015.
20. Vasishtha, P.C. Botany for Degree students: Gymnosperms, revised edn., S. Chand and Comp. Ltd., N. Delhi, 2018.
21. Bhatnagar, S.P. and Alok Moitra, Gymnosperms, New age International (P.) Ltd., NBew Delhi, 2000.

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 30marks University Exam (UE) 70 marks

Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 30	Class test Assignment/Presentation	03x03= 30 Total=30
External Assessment : University Exam Section: 70 Time : 02.00 Hours	Section(A) : Three Very Short Questions (50 Words each) Section (B) : Four Short Questions (200 Words Each) Section (C) : Two Long Questions (500 Words each)	01x10=10 06x05=30 03x10=30 Total 70

Any remarks/suggestions:

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Govt. M.H. College of Home Sc. & Sc. for Women, Jabalpur, M.P.

Session 2023 – 24

Botany

Syllabus Prescribed for the
Degree of Bachelor of Science in Botany

Part A Introduction

Program: Certificate		Class: B.Sc. I Year	Year: 2021	Session: 2021-22
Subject: Botany				
1	Course Code	S1-BOTA2T		
2	Course Title	Basic Botany Practical (Paper 2)		
3	Course Type (Core Course/Elective/General/Elective/Vocational/....)	Core Course		
4	Pre-requisite (if any)	To study this course, a student must have had the subject of Biology/Agriculture in Class/12th		
5	Course Learning outcomes (CLO)	<ul style="list-style-type: none"> • Students will learn to carry out practical work in the laboratory. • Interpreting plant morphology and anatomy of various groups of lower and higher plants. • Students will be able to identify the major groups of microorganism. 		
6	Credit Value	02 Credits		
7	Total Marks	Max. Marks: 30+70	Min Passing Marks: 35	

Part B-Content of the Course

Total No. of Practical- 30 hours Tutorials- 00 Practical- (in 2 hours per week): L-T-P:

Unit	Topics	No. of Practical
I	<ol style="list-style-type: none"> 1. Study of various types of leaves, inflorescence, Flowers and fruits. 2. Understanding various parts of Microscope (simple and compound microscope) 3. Study of plant cells (e.g. Onion etc.) 4. Study of permanent slides of mitosis and meiosis 5. Study of electron Micrographs of cell and organelles from internet, You-tube. 6. Identification of various algae from specimens, slides and temporary mounts of water from nearby areas like, <i>Nostoc</i>, <i>Oscillatoria</i>, <i>Volvox</i>, <i>Spirogyra</i>, <i>Oedogonium</i>, <i>Chara</i> and specimens and pictographs of marine algae like <i>Ectocarpus</i>, <i>Saragassum</i>, <i>Polysiphonia</i>. 7. Study and identification of some Bryophytes like <i>Riccia</i>, <i>Marchantia</i>, <i>Anthoceros</i>, <i>Funaria</i> and Field visit. 8. Study of some fossils (specimens and slides) 9. Study of some Pteridophytes like <i>Lycopodium</i>, <i>Sellaginella</i>, <i>Equisetum</i>, <i>Marselia</i> and study of any on fern. 	30

10. Section cutting of Pteridophytes and Gymnosperms: Stem, root and leaves.
11. Specimens study of Pteridophytes and Gymnosperms Cones.
12. Study of fungal Structures and preparation of temporary *Pencillium, Alternaria, Albugo, Helimenihosporium*.
13. Permanent slides of Puccinia on host.
14. Study of various fungal plant diseases.
15. Observation of Symtoms of virus and bacteria on plants.
16. Gram staining techniques.

1. विभिन्नप्रकार की पत्तियों, पुष्पक्रमों, पुष्पऔरफलों का अध्ययन।
2. सूक्ष्मदर्शी के विभिन्नभागोंको समझना (सरल औरसंयुक्तसूक्ष्मदर्शी)
3. पादपकोशिकाओं का अध्ययन (जैसे प्याज की कोशिका आदि)
4. समसूत्रीविभाजनऔर अर्धसूत्री विभाजन की स्थायीस्लाइडों का अध्ययन।
5. इंटरनेट, यू-ट्यूब से पादपकोशिकाऔरकोशिकांग के इलेक्ट्रॉनमाइक्रोग्राफ का अध्ययन।
6. स्थाईस्लाइडऔरआस-पास के क्षेत्रों से पानी के अस्थायीनोस्टॉक, ओसीलेटोरिया, वॉलबॉक्स, स्पाइरोगाइरा, ऊडोगोनियम, काराऔरनमूनेजैसेसमुद्री शैवालकेपिक्टोग्राफऔर एक्टोकार्पस, सरगासम, पॉलीसाईफोनिया का अध्ययन।
7. कुछब्रायोफाइट्स का अध्ययन औरपहचानजैसे-रिक्सिया, मार्केन्शिया, ऐंथोसिरोस, फ्यूनेरियाऔरफील्ड अध्ययन।
8. कुछजीवाश्मों का अध्ययन (प्रदर्शों और स्लाइड)
9. कुछटेरिडोफाइट्स का अध्ययन जैसेलाइकोपोडियम, सिलेजिनेला, इक्किसेटमख मार्सेलियाऔरकिसीभी एक फर्न का अध्ययन
10. टेरिडोफाइट्सऔरजिम्नोस्पर्म: तना, जड़ औरपत्तियों का अनुप्रस्थकाट का अध्ययन
11. टेरिडोफाइट्सऔरजिम्नोस्पर्म के शंकु का अध्ययन।
12. कवकीय संरचनाओं का अध्ययन औरअस्थायीस्लाइड का अध्ययन: म्यूकर, राइजोपस, एस्परजिलस, यीस्ट, पेनिसिलियम, अल्टरनेरिया, अल्बूगो, हेलिमेंथोस्पोरियम
13. पोषकपरपकसीनिया की स्थायीस्नाइड का अध्ययन।
14. विभिन्नकवकीय पौधों के रोगों का अध्ययन
15. पौधोंपरविषाणु, जीवाणु के लक्षणों का अवलोकन।
16. ग्रामअभिरंजनतकनीक।

Keywords/Tags: Microscope, Algae, Bryophyta, Pteridophyta, Gymnosperm, Fungi
Part C-Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

1. Bendre Ashok and Ashok kumar, A textbook of Practical Botany, vol 1, Rastogi Pub. Meerut, 1984.
2. Pandey B.P. Modern Practical Botany, vol.1 S. Chand and Co. Ltd. N.Delhi, 17thedn.

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3. Sing M.P., Choudhry S.B. and Sahu H.BA Textbook of Practical Botany, daya Pub. House, N. Delhi, 2005.
 4. Shahezad, AkilMohd., Practical Botany, Shanti Prakashan, Gwalior, 2016.
 5. Elizabeth Margaret and Angela G Practical manual of Botany. Vol. 1 New Age (Pub.) Ltd., Delhi, 2007.

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Internal Assessment	Marks	External Assessment	Marks
Class Interaction/Quiz	10	Viva Voce on Practical	10
Attendance	5	Practical Record File	10
Assignments (Charts/Model Seminar/Rural Service/ Technology Dissemination/ Report of Excursion/lab visits/Survey/Industrial visit)	15	Table Work/Experiments	50
Total	30		70

Any remarks/suggestions: Practical may be adjusted accordingly by the teachers.

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GOVT. M. H. COLLEGE OF HOME SCIENCES AND
SCIENCE FOR WOMEN (AUTO.), JABALPUR (M.P.)

Department of Botany

UNDER GRADUATE

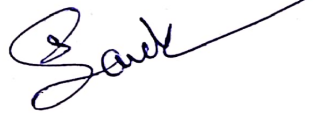
Session- 2023-24

Class- B.Sc. II Year

Course Type- Minor/Elective

Course Title- Paper -II (Industrial Botany)





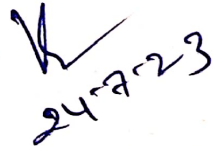




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Govt. M.H. College of Home Sc. & Sc. for Women, Jabalpur, M.P.

Session 2023 – 24

Botany

Syllabus Prescribed for the
Degree of Bachelor of Science in Botany

Part A Introduction
सैद्धांतिक प्रश्नपत्र के पाठ्यक्रम

Part A Introduction

Program: Diploma

Class: B.Sc.

Year: Second

Session: 2022-23

Subject: Botany

1	Course Code	S2-BOTA2T	
2	Course Title	Industrial Botany	
3	Course Type (Core Course/Elective/Generic Elective/Vocational/...)	Major-2 / Minor / Elective	
4	Pre-requisite (if any)	The course is open to all who have completed I year certificate course in botany and other subjects	
5	Course Learning outcomes (CLO)	<ul style="list-style-type: none">This course will provide knowledge on plants and their parts used in various industries.Students will get an idea to establish plant based natural product industry.This course will make the students self-reliant.	
6	Credit Value	4 Credits	
7	Total Marks	Max. Marks: 30+70	Min. Passing Marks: 35

Part B- Content of the Course

Total No. of Lectures- 60 Hours Tutorials- 0 Practical = 0 (theory 2 hours per week):

L/T/P:

Unit	Topics	No. of Lectures
I	<p>1 Plants in Timber Industry:</p> <p>1.1 Timber yielding trees of India and their products (Shisham, Sal, Teak, Deodar, Babool).</p> <p>1.2 Bamboo and Cane Industry.</p> <p>1.3 Kattha' Industry.</p> <p>इमारती लकड़ी उद्योग में पादप</p> <p>1.1 भारत के इमारती लकड़ी उत्पादक वृक्ष एवं उनके उत्पाद (शीशम, साल, सागौन, देवदार, बबलू)</p>	12

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	1.2 बांस और बेंत उद्योग। 1.3 कर्था उद्योग।	
II	Leaf Based Industries- 1.1 Utility products of leaf(Palash, Banana). 1.2 Tea Industry (Production of various types of teas). 1.3 Leaf oil Industry (Mint, Camphor, Neem, Tulsi, Eucalyptus and Lemon grass). 1.4 Leaves used as spices (Kasoori Methi, Pudina, Curry patta, Onion, Tejpatta). पत्ती आधारित उद्योग 1.1 पत्तियों के उपयोगी उत्पाद (पलाश, केला)। 1.2 चाय उद्योग (विभिन्न प्रकार की चाय का उत्पादन) 1.3 पत्तियों से प्राप्त तेल उद्योग (पुदीना, कपूर, नीम, तुलसी, लीनगिरी और लेमन ग्रास) 1.4 मसाले के रूप में उपयोग की जाने वाली पत्तियां (कस्तूरी मेथी, पुदीना, करी पत्ता, प्याज और तेजपत्ता)	12
III	Flower based Industries — 1.1 Perfume products of Gulab, Jasmine, Henna, 1.2 Color industry (Food and Holi colors). 1.3 Raw material for Fermentation (Mahua). फूल आधारित उद्योग 1.1 गुलाब, चमेली और मेंहदी के इत्र उत्पाद। 1.2 रंग उद्योग (खाद्य और होली के रंग)। 1.3 किण्वन के लिए कच्चा माल (महुआ)।	12
IV	Fruits and Seeds based Industries- 1.1 Jams, Jellies, Juice, Sauce and Pickles. 1.2 Poha and Daal Industry. 1.3 Edible Oil Industry (Groundnut, Soybean) 1.4 Starch, Glucose, and Dextrose Industry. फल और बीज आधारित उद्योग 1.1 जैम, जेली, जूस, सॉस, अचार। 1.2 पोहा और दाल उद्योग। 1.3 खाद्य तेल उद्योग (मूंगफली और सोयाबीन)। 1.4 स्टार्च, ग्लूकोज और डेक्सट्रोस उद्योग।	12
V	Other parts of plants based Industries- 1.1 Sugar and Jaggery Industries. 1.2 Jute and Agarbatti stick making industry. 1.3 Project proposal preparation for establishment of an industry 1.4 Grants and funding provider organizations of India. पौधों के अन्य भाग आधारित उद्योग 1.1 चीनी और गुड़ उद्योग। 1.2 जूट और अगरबत्ती बनाने का उद्योग। 1.3 उद्योग स्थापित करने हेतु परियोजना प्रस्ताव बनाना। 1.4 भारत के अनुदान और वित्तपोषण प्रदाता संगठन।	12
1.1 Keywords/Tags: Keywords-Timber, Bamboo, Cane, Jute, Tea Industry, Oil yielding leaves, Perfumes, Leaf spices, Fermentation, Food colours, Edible oils, Food preservation techniques, Sugar industries.		

Part C-Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

1. Gerald E Dickens Economic Botany , principles and Practice, Kluwer Academic Publishers(2001)
2. Kocchar, S.L. Economic Botany, Cambridge University Press, UK(2016)
3. Simpson, B.B. and Ogorzaly, M.C. Economic Botany, Tata Macgray Hill Publisher(1986)

Suggested online material:

1. <https://krishi.icar.gov.in/spui/bitstream/123456789/19815/1/Timber.pdf>
2. <file:///C:/Users/CSP/Downloads/7B.pdf>
3. https://swsu.ru/sbornik-statey/pdf/11_chapter%202.pdf

Suggested equivalent online courses:-----

Part-D : Assessment and Evaluation (Theory)

Suggested Continuous Evaluation Methods :

Maximum Marks : 100; CCE : 30, University Exam (UE): 70

Internal Assessment: Continuous Comprehensive Evaluation (CCE): 30	Class Test, Assignment/Presentation	Total 30
External Assessment : University Exam Section: 70 Time : 03.00 Hours	Section (A): Objective Type Questions	
	Section (B): Short Questions	
	Section (C): Long Questions	
	Total	70

Note: Field Visit/project report in any specific topic can be prepared by the Students.

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Govt. M.H. College of Home Sc. & Sc. for Women, Jabalpur, M.P.
Session 2023 – 24

Botany
Syllabus Prescribed for the
Degree of Bachelor of Science in Botany
Syllabus of Practical Paper

Part A Introduction			
Program: Diploma		Class: II year	Year: 2022
		Session: 2022-23	
Subject: Botany			
1	Course Code	S2BOTA2P	
2	Course Title	Industrial Botany / Practical	
3	Course Type (Core Course/Elective/Generic Elective/Vocational/...)	Major-2 / Minor / Elective	
4	Pre-requisite (if any)	To study this course, a student must have the subject Botany, Biology, Life Science in First Year/Certificate.	
5	Course Learning outcomes (CLO)	<ul style="list-style-type: none"> students will be able to recognize different parts of plants used in plant-based industries This course will provide practical knowledge to establish small or large scale plant based industries 	
6	Credit Value	2 Credits	
7	Total Marks	Max. Marks: 30+70 =100	Min. Passing Marks:35
Part B- Content of the Course			
Total No. of Lectures-00 Tutorials-00 Practical 30 Hours (02 hours per week):			
Unit	Topics		No. of Lectures
I-V	<ol style="list-style-type: none"> Preparation of Holi color's from locally available flowers Preparation of food colors from locally available flowers Perfume extraction process by distillation method Preparation and preservation techniques of jams, jellies and prickles. Extraction and preservation of juices (lemon and orange etc.) Preparation of different types of teas (Tulsi tea, lemon tea etc.) Identification, collection and extraction of oil yielding leaves. Identification, collection and specimen preparation of leafy spices. Hands on training for preparation of "Douna and Pattal" using Palash and Banana leaves. Visit to any plant based industry. Herbarium preparation of different parts of plants used in various industries <p>*Practicals can be performed according to availability</p> <ol style="list-style-type: none"> स्थानीय रूप से उपलब्ध फूलों से होली के रंग तैयार करना स्थानीय रूप से उपलब्ध फूलों से खाद्य रंग तैयार करना टासवन विधि द्वारा इत्र निष्कर्षण प्रक्रिया का अध्ययन करना जैम, जेली और अचार की तैयारी और संरक्षण तकनीक का अध्ययन करना रस (नींबू और संतरा आदि) का निष्कर्षण और संरक्षण का अध्ययन 		30

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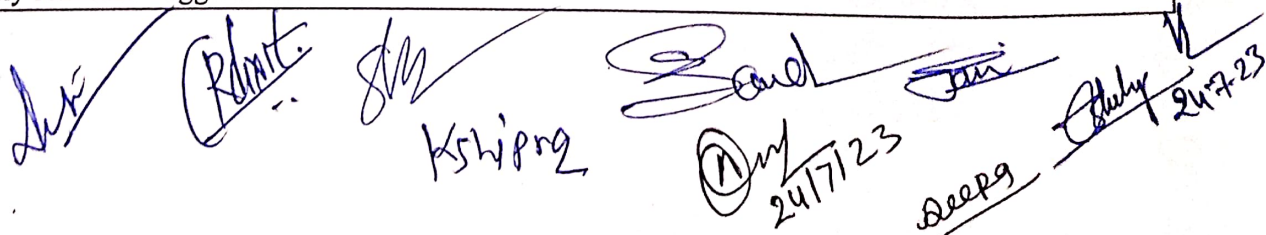
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	<p>करना</p> <p>8 विभिन्न प्रकार की चाय (तुलसी की चाय, नींबू की चाय आदि) तैयार करना।</p> <p>7 तेल देने वाली पत्तियों की पहचान, संग्रह और निष्कर्षण का अध्ययन करना।</p> <p>8 पत्तेदार मसालों की पहचान, संग्रह और नमूना तैयार करना।</p> <p>9 पलाश और केले के पत्तों से दौना और पत्तल तैयार करने का प्रशिक्षण।</p> <p>10 किरसी पौधों आधारित औद्योगिक इकाई का भ्रमण।</p> <p>11 विभिन्न उद्योगों में प्रयुक्त पौधों के विभिन्न भागों के हर्बेरियम तैयार करना।</p> <p>*प्रायोगिक कार्य स्थानीय उपलब्धता के अनुसार किया जा सकता है।</p>	
<p>Keywords/Tags: Holi, food colors, Perfume extraction, jams, jellies and prickles , juices preservation techniques, oil yielding leaves, leafy spices, Palash and Banana leaves</p>		

<p>Part C-Learning Resources</p> <p>Text Books, Reference Books, Other resources</p>
<p>Suggested Readings:</p> <p>Suggested digital platforms web links-----</p>
<p>Suggested equivalent online courses:-----</p>

<p>Part D-Assessment and Evaluation</p>			
<p>Suggested Continuous Evaluation Methods:</p> <p>Maximum Marks : 100</p> <p>Continuous Comprehensive Evaluation (CCE) : 30 marks University Exam (UE) 70 marks</p> <p>It is compulsory to get minimum passing marks in Internal and External Assessment separately.</p>			
Internal Assessment	Marks	External Assessment	Marks
Class Interaction /Quiz		Viva Voce on Practical	
Attendance		Practical Record File	
Assignments (Charts/ Model Seminar / Rural Service/ Technology Dissemination/ Report of Excursion/ Lab Visits/ Survey / Industrial visit)		Table work / Experiments	
TOTAL	30		70
<p>Any remarks/ suggestions:</p>			



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GOVT. M. H. COLLEGE OF HOME SCIENCES AND
SCIENCE FOR WOMEN (AUTO.), JABALPUR (M.P.)

Department of Botany

UNDER GRADUATE

Session- 2023-24

Class- B.Sc. III Year

Course Type- Minor/Elective

Course Title- Paper -II (Ethnobotany)

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Govt. M.H. College of Home Sc. & Sc. for Women, Jabalpur, M.P.

Session 2023 – 24

Botany

Syllabus Prescribed for the
Degree of Bachelor of Science in Botany

Part A Introduction

Program: Degree		Class: B.Sc. III Year	Session: 2023-24
Subject: Botany			
1	Course Code	S3-BOTA2T	
2	Course Title	Ethnobotany (Theory)	
3	Course Type (Core Course/Elective/Generic /Elective/Vocational/....)	Minor/ Elective	
4	Pre-requisite (if any)	To study this course, a student must have had the subject in diploma.	
5	Course Learning outcomes (CLO)	On successful completion of this course the students will be able to: 1. Understand the importance of plants and their relationship with Human being. 2. Explain how plants are a part of culture and traditions 3. How traditional medicine can cure various diseases	
6	Credit Value	04 Credits	
7	Total Marks	Max. Marks: 30+70	Min Passing Marks: 35

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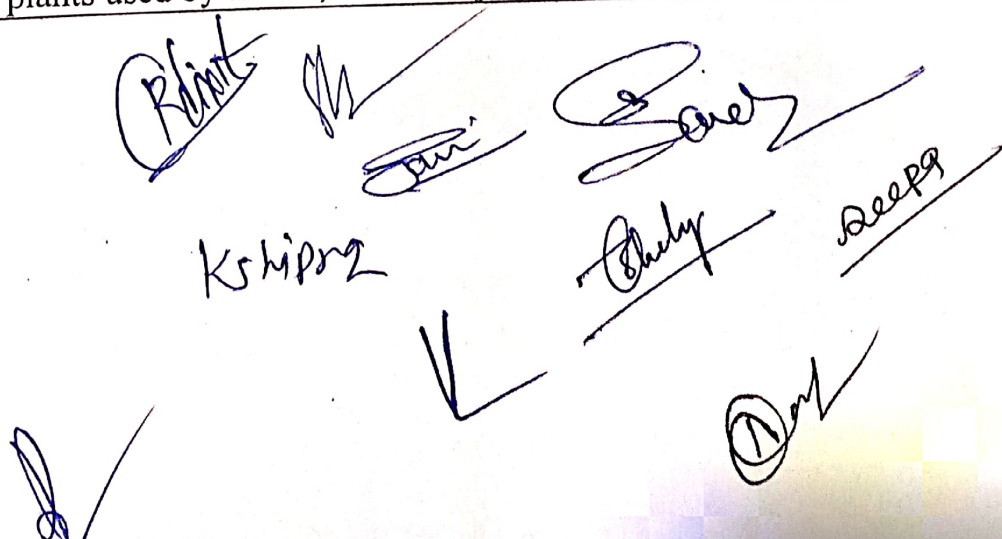
Part B-Content of the Course

Total No. of Lecture- 60, Tutorials- 0 Practical- 0 (in hours per week): L-T-P: 2-0-0

Unit	Topics	No. of Lectures
I	<p>Ethnobotany Introduction, concept, scope and objectives, Ethnobotany as an interdisciplinary science. Various branches of Ethnobotany. The relevance of ethnobotany in the present context; Major and minor ethnic groups or Tribals of India, and their life styles.</p> <p>एथ्नोबोटनी परिचय, अवधारणा, कार्यक्षेत्र और उद्देश्य, एथ्नोबोटनी एक अंतःविषय विज्ञान के रूप में। एथ्नोबोटनी की विभिन्न शाखाएँ। वर्तमान संदर्भ में एथ्नोबोटनी की प्रासंगिकता; भारत के प्रमुख और छोटे जातीय समूह या आदिवासी, और उनकी जीवन शैली।</p>	12
II	<p>Plants used by thei tribals: a) Food plants b) intoxicants and beverages c) Resins and oils and miscellaneous uses. Plants in mythology, Taboos and totems in relation to plants, folklore and folktales, Wildlife protection in tribals. Plants in similes and metaphors.</p> <p>आदिवासियों द्वारा उपयोग किए जाने वाले पौधे: ए) खाद्य पौधे बी) नशीले पदार्थ और पेय पदार्थ सी) रेजिन और तेल और विविध उपयोग। पौराणिक कथाओं में पौधे, पौधों के संबंध में वर्जनाएँ निषेध और कुलदेवता, लोककथाएँ और लोककथाएँ, आदिवासियों में वन्यजीव संरक्षण। उपमाओं और रूपकों में पौधे।</p>	
III	<p>Medico-ethnobotanical sources in India significance of the following plants in ethno botanical practices (along with their habitat and morphology) a) Azadirachtha indica b) Ocimum sanctum c) Vitex negundo, d) Butea monosperma g) Cassia fistula h) Indigofera tinctoria. Role of ethnobotany in modern medicine with special example Rauvolfia serpentine, Terminalia arjuna, Artemisia, Withania. Role of ethnic group in conservation of plant genetic resources. Endangered taxa and forest management.</p> <p>भारत में मेडिको-एथ्नोबोटैनिकल स्रोत एथ्नो वानस्पतिक</p>	

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	<p>प्रथाओं में निम्नलिखित पौधों का महत्व (उनके निवास स्थान और आकारिकी के साथ) ए) अजादिराचथा इंडिका बी) ओसीमम सेंकटम सी) विटेक्स नेगुंडो, डी) ब्यूटिया मोनोस्पर्मा जी) कैसिया फिस्टुला एच) इंडिगोफेरा टिनक्टोरिया। विशेष उदाहरण राउवोल्फिया सर्पेन्टाइन, टर्मिनलिया अर्जुना, आर्टेमिसिया, विथानिया के साथ आधुनिक चिकित्सा में एथ्नोबोटनी की भूमिका। पादप आनुवंशिक संसाधनों के संरक्षण में जातीय समूह की भूमिका। लुप्तप्राय टैक्सा और वन प्रबंधन।</p>	
IV	<p>Ethnobotany and legal aspects. Ethnobotany as a tool to protect interests of ethnic groups. Sharing of wealth concept with few examples from India. Biopiracy, Intellectual Property Rights and Traditional Knowledge. Role of Peoples Biodiversity Register (PBR) and Biodiversity Management committees (BMC).</p> <p>एथ्नोबोटनी और कानूनी पहलू। जातीय समूहों के हितों की रक्षा के लिए एक उपकरण के रूप में एथ्नोबोटनी। भारत से कुछ उदाहरणों के साथ धन की अवधारणा को साझा करना। बायोपाइरेसी, बौद्धिक संपदा अधिकार और पारंपरिक ज्ञान। पीपुल्स बायोडायवर्सिटी रेजिस्टर (पीबीआर) और जैव विविधता प्रबंधन समितियों (बीएमसी) की भूमिका।</p>	
V	<p>Study of common Plants in Skin Diseases, Bronchial inflammation, Asthma, Jaundice, Malaria, Expulsion of Worms, Jaundice, Piles, Rheumatism, Heart Diseases, Amoebic Dysentery, leukoderma</p> <p>त्वचा रोग, ब्रॉन्कियल सूजन, अस्थमा, पीलिया, मलेरिया, कृमियों का निष्कासन, पीलिया, बवासीर, गठिया, हृदय रोग, अमीबिक पेचिश, ल्यूकोडर्मा में सामान्य पौधों का अध्ययन</p>	
<p>Keywords/Tags: Ethnobotany, plants used by tribals, common plants in curing diseases PBR</p>		



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Part C-Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

- 1) S.K. Jain, Manual of Ethnobotany, Scientific Publishers, Jodhpur, 1995.
- 2) S.K. Jain (ed.) Glimpses of Indian Ethnobotany, Oxford and I B H, New Delhi- 1981
- 3) Lone et al., Palaeoethnobotany
- 4) S.K. Jain (ed.) 1989. Methods and approaches in ethnobotany. Society of botanists, Lucknow, India. 5) S.K. Jain, 1990. Contributions of Indian ethnobotany; Scientific publishers, Jodhpur.
- 6) Colton C.M. 1997. Ethnobotany- Principles and application and uses - Chichester
- 7) Rama Rao, N and A.N. Henry (1996).

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 30marks University Exam (UE) 70 marks

Internal Assessment :
Continuous Comprehensive Evaluation (CCE) : 30

Class test Assignment/Presentation

30



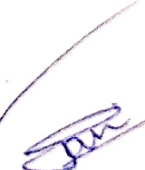
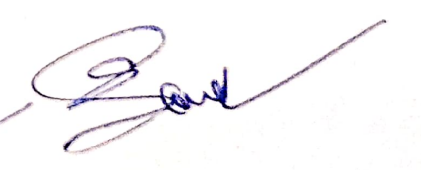
External Assessment :
University Exam Section: 70
Time : 02.00 Hours

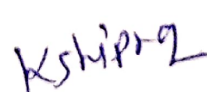
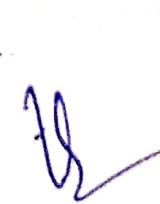

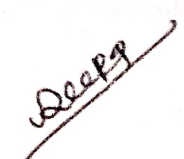
Section(A) : Three Very Short
Section (B) : Four Short Questions
Section (C) : Two Long Questions



70

Any remarks/suggestions:

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Govt. M.H. College of Home Sc. & Sc. for Women, Jabalpur, M.P.

Session 2023 – 24

Botany

Syllabus Prescribed for the
Degree of Bachelor of Science in Botany

Part A Introduction

Program: Certificate		Class: B.Sc. III Year	Session: 2023-24
Subject: Botany			
1	Course Code	S3-BOTA2P	
2	Course Title	Ethnobotany (Practical)	
3	Course Type(Core Course/Elective/Generic /Elective/Vocational/....)	Minor	
4	Pre-requisite(if any)	To study this course, a student must have had this subject in Diploma. This course can be opted as an elective by the students of following subjects:/ Open for all	
5	Course Learning outcomes (CLO)	<p>On successful completion of this course, the students will be able to:</p> <ol style="list-style-type: none"> 1. Able to recall the botanical names of crops 2. Develop the ability to prepare herbarium 3. Survey and inspect the plants growing around 4. Interpret the data available in traditional knowledge 5. Develop the habit of conservation 	
6	Credit Value	02 Credits	
7	Total Marks	Max. Marks: 30+70	Min Passing Marks: 35
Part B-Content of the Course			
Total No. of Lectures-0, Tutorials- 0, Practical- 30 (in hours per week): 0-0-2			
Unit	Topics	No. of lectures (2 Hours Each)	
I	<ol style="list-style-type: none"> 1. Prepare an inventory of plants in the vicinity (in the College campus , Near Your Home, In your village or town) 2. Herbarium Techniques 3. Preparation of Questionnaire for collection of Ethnobotanical data 4. Study of Indigenous literature for ethnobotanical knowledge 5. Listing of crop plants agricultural and horticultural crops 	30	

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	<p>with their varieties growing in your district</p> <ol style="list-style-type: none"> 6. Study of plants with ethnomedicinal importance 7. Preparation of herbal colours from plant products 8. Identify the seeds of cereals , millets and legumes 9. Prepare herbarium of at least 20 plants of local ethnobotanical importance 10. Field visit for ethnobotanical study 11. Identification of plant parts of ethnomedicinal importance 12. Plantation of at least one RET species of ethnobotanical importance in the campus by every student and conserve it. 	
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Keywords/Tags: Ethnobotany, Herbarium,

Part C-Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

1. Jain , S.K . , Manual of Ethnobotany , Scientific Publishers Jodhpur, India, 2010 2nd edition
2. Gary J. Martin, Ethnobotany A methods manual , Chapman & Hall, Madras, India 2004 Author Surname, Initials, "Book Title", Publisher's name, City/country of publication, Year of publication. Edition No. if any.
3. Author Surname, Initials, "Book Title", Publisher's name, City/country of publication, Year of publication. Edition No. if any.

Suggestive digital platforms/ web links

http://www.bhojvirtualuniversity.com/ss/sim/botany/mse_botany_final_paper8_bll.doc

Suggested equivalent online courses: www.eshiksha.mp.gov.in

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Internal Assessment	Marks	External Assessment	Marks
Class Interaction/Quiz	0	Viva Voce on Practical	70
Attendance		Practical Record File	
Assignments (Charts/Model Seminar/Rural Service/ Technology Dissemination/ Report of Excursion/lab visits/Survey/Industrial visit)		Table Work/Experiments	
		Total	100

Any remarks/suggestions:.



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