FIRST YEAR OF BACHELOR OF SCIENCE MAJOR/MINOR BOTANY REVISED SYLLABUS ACCORDING TO CBCS NEP2020

COURSE TITLE: PLANT DIVERSITY SEMESTER-II, W.E.F. 2023-2024

RECOMMENDED BY THE BOARD OF STUDIES IN BOTANY
AND
APPROVED BY THE ACADEMIC COUNCIL

Devrukh Shikshan Prasarak Mandal's
Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh.
Tal.Sangmeshwar, Dist. Ratnagiri-415804, Maharashtra, India

Academic Council Item No: 3 dated 08/07/2023

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangmeshwar, Dist. Ratnagiri-415804,
Name of the Parent University	:	University of Mumbai
Name of the Programme	:	Bachelor of Science
Name of the Department	:	Botany
Name of the Class	:	First Year
Semester	:	Second
No. of Credits	:	02
Title of the Course	:	Plant Diversity
Course Code	:	S103BTT
Name of the Vertical in adherence to NEP 2020	:	Major and Minor
Eligibility for Admission	:	Admitted to B. Sc. Degree Programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra
Passing Marks	:	40%
Mode of Assessment	:	Formative and Summative
Level	:	UG
Pattern of Marks Distribution for TE and CIA	:	60:40
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2023-2024
Ordinances /Regulations (if any)		

Syllabus for First Year of Bachelor of Science in Botany

(With effect from the academic year 2023-2024)

SEMESTER-II **Paper No.– Botany Paper – I**

Course Title: Plant Diversity **No. of Credits - 02**

Type of Vertical: Major and Minor **COURSE CODE: S103BTT**

Learning Outcomes Based on BLOOM's Taxonomy:

After completing the course, the learner will be able to…

Course Learning Outcome No.	Blooms Taxonomy	Course Learning Outcome
CLO-01	Remember	Recall occurrence, structure, reproduction of *Nephrolepis* and *Cycas*
CLO-02	Understand	Describe morphological features of root, stem, leaf, inflorescence, flower
CLO-03	Apply	Discuss salient features of Malvaceae and Amarylidaceae family
CLO-04	Analyse	Evaluate economic importance of pteridophytes, gymnosperms and some families of angiosperms
CLO-05	Evaluate	Justify different stages in the life cycle of *Nephrolepis* and *Cycas*

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(With effect from the academic year 2023-2024)

SEMESTER-II **Paper No.– Botany Paper – I**

Course Title: Plant Diversity **No. of Credits - 02**

Type of Vertical: Major and Minor **COURSE CODE: S103BTT**

COURSE CONTENT			
Module No.	**Content**	**Credits**	**No. of Lectures**
Unit I Pteridophytes and Gymnosperms	1. Pteridophytes: General characters Classification of pteridophytes (G.M. Smith) 2. *Nephrolepis*: Occurrence, structure, systematic position reproduction and life cycle 3. Economic importance of pteridophytes 4. Gymnosperms: General characters, Classification of gymnosperms (Chamberlin) 5. *Cycas*: Occurrence, structure, systematic position reproduction and life cycle 6. Economic importance of gymnosperms	02	15
Unit III Angiosperms	1. Taxonomy: Introduction, hierarchy in classification, binomial nomenclature 2. Plant Morphology: Root, Stem, Leaf -Structure, types 3. Inflorescence: Introduction, structure of typical inflorescence, Types- racemose and cymose 4. Flower: Introduction, structure of a typical flower (*Hibiscus*), symmetry and types (hypogynous, epigynous, perigynous) 5. Study of following families: Malvaceae, Amaryllidaceae 6. Economic importance of both families		15
	Total	02	30

Required Previous Knowledge

Basic Knowledge of fundamentals of Biology, branches of Biology, basics of pteridophytes, gymnosperm and angiosperm is necessary before starting to learn the course

Access to the Course

The course is available for all the students admitted for Bachelor of Science as a Major or a minor. The students seeking admission in other disciplines may select the course as a minor considering the terms and conditions laid down by the University of Mumbai, the Government of Maharashtra, and the college, from time to time.

Forms of Assessment

The assessment of the course will be of Diagnostic, Formative and Summative type. At the beginning of the course diagnostic assessment will be carried out. The formative assessment will be used for the Continuous Internal Evaluation whereas the summative assessment will be conducted at the end of the term. The weightage for formative and summative assessment will be 60:40. The pattern will be followed as passed in Academic Council of the college.

Grading Scale

The grading scale used is O to F. Grade O is the highest passing grade on the grading scale, and grade F is a fail. The Board of Examinations of the college reserves the right to change the grading scale.

Reference Books

1. College Botany Volume I and II by Gangulee, Das and Dutta. Central Education Enterprises
2. Cryptogamic Botany Volume I and II by G M Smith, McGraw Hill.
3. Text book of Fungi by O.P. Sharma, Tata McGraw
4. Morphology and Evolution of Vascular Plants by Gifford, E. M. and Foster, A. S., W.H. Freeman & Co., New York.
5. Cryptogamic Botany Vol. I & II (2nd Edition) by Gilbert, M. S., Tata McGraw Hill Publishing Co., Ltd New Delhi.
6. Introductory Phycology by Kumar, H. D. 1988, Affiliated East-West Press Ltd., New York.
7. Comparative Morphology of Vascular Plants by Foster, A. S. and Gifford, A.E.M. jr. Vakils, Peffer & Simons Pvt., Ltd.
8. The Morphology of Angiosperms by Sporne, K.R. B.I. Publication, Bombay.
9. Taxonomy of Vascular Plants by Lawrance. G.H.M. 1951. MacMillan, New York.
10. Environmental Science: A Global Concern by Cunningham.W.P. and Saifo S.W. 1997. WCB. McGraw Hill.
11. Biochemistry and Molecular Biology of Plants. by Buchanan. B.B. Grussem. W. and Jones. R.L. 2000. American Society of Plant Physiologists, Maryland, USA.
12. Plant Melabolism (2nd Edition) by Collins. H.A. and Edwards D.H. Lefebvre. D.D. and Layzell. D.B. (eds) 1997. Longman, Essex, England
13. Genetics by Russel. Wesley Longman inc publishers. (5th edition)
14. Plant Physiology by Taiz and Zeiger Sinauer Associates inc. publishers
15. Fundamentals of Ecology by E P Odum and G W Barrett. Thompson Asia Pvt Ltd. Singapore.
16. Cell Biology by De Robertis

17. A Text Book of Systematic Botany by Sutaria R N
18. Taxonoy of Angiosperms by Pandey S N and Mishra S D
19. A text book of Plant Ecology by Ambasht R.S.
20. Fundamentals of Cytology by L. W. Sharp.
21. Taxonomy of Angiosperms by V.N. Naik, Tata McGraw Hill
22. Plant Systematics: An integrated Approach by Gurcharan Singh, Science Publ.
23. Prescott, L.M., Harley J.P., Klein D. A. (2005). Microbiology, McGraw Hill, India. 6th edition.
24. Pelczar, M.J. (2001) Microbiology, 5th edition, Tata McGraw-Hill Co, New Delhi.