



Master of Science (Botany)
M. Sc Botany Semester II

Course Code	PS02CBOT54	Title of the Course	LAB-I
Total Credits of the Course	04	Hours per Week	08

Course Objectives:	1. To get the students familiar with the principles and operations of different kinds of bioanalytical tools and techniques related to the course.
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PS02CBOT54 (Lab IA)
(Bioanalytical Techniques)

Sr.No.	Practical Exercises
1	Performance of SDS PAGE
2	Performance of Agarose gel electrophoresis.
3	Performance of density gradient centrifugation.
4	Performance of thin layer and paper chromatography
5	Demonstration of HPLC and Flash chromatography
6	Determination of absorption maxima in visible spectroscopy.
7	Estimation of protein by UV-Visible spectroscopy.
8	Demonstration of FTIR.

PS02CBOT54 (Lab IB)
(Plant Systematics)

Sr.No.	Practical Exercises
1	Description of specimens from locally available representative families.
2	Description of a genus based on 3-4 different species.
3	Comparison of different species of a genus and different genera of a family to calculate





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	similarity coefficients.
4	Identification of plant specimens using floras and identification keys.
5	Preparation of identification keys for at least 10 specimens based on morphological features.
6	Study of herbarium specimens of different families covered in theory course.
7	Field trips within and around the campus; compilation of field notes and preparation of herbarium sheets of such plants, wild or cultivated, as are abundant.
8	Use of palynological, chemical methods in taxonomy.
9	Use of molecular markers to determine genetic relatedness between species.
10	Construction of dendrograms using appropriate software.

Learning Methodology	<p>Practical exercises will be conducted by providing relevant equipment and chemicals for conducting practicals for the first part.</p> <p>For the second part live plant samples/fixed materials/ permanent slides/ herbarium specimens of relevant materials will be provided.</p> <p>Students will be encouraged to make field surveys of local areas for collection of live materials relevant to their course.</p> <p>Students will be taken on Botanical tour to the forested area within or outside Gujarat state so as to observe and study the diversity among plants in the live condition, make plant collections for lab studies.</p> <p>Students will be required to make relevant plant materials- slides/herbarium or Botanical museum specimens for submission.</p>
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Practical Examination (As per CBCS R.6.8.3)	20%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce and Attendance (As per CBCS R.6.8.3)	10%





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3.	University Examination	70%
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Course Outcomes: Having completed this course, students will be able to

1.	Understand the principles of the relevant exercises conducted, operate different kinds of scientific equipment related to the course.
2.	Identify and recognise various plant families and the species belonging to them.
3.	Use different kinds of Floras, manuals to diagnose various kinds of species.
4.	Use different kinds of identification keys and software for plant identification.
5.	Construct taxonomic identification keys and dendrograms for local flora.
6.	Observe evolutionary trend among different groups of angiosperms.

	References:
1	Cook T 1903. The Flora of Presidency of Bombay, Vol. I (Indian Reprint) Bishen Singh, Mahendra Pal Singh, Dehradun.
2	Jain S. K. and Rao R. R. Handbook of Field and Herbarium Methods, Today and Tomorrow Publishers, New Delhi.
3	Lawrence G. H. M. 1951. Taxonomy of Vascular Plants. Macmillan.
4	Shah G.L. 1978. Flora of Gujarat State. Sardar Patel University.
5	Regional floras and monographs on different taxonomic groups.

