



**Swami Shraddhanand College**  
**(University of Delhi)**  
Alipur, Delhi- 1100036  
[www.ss.du.ac.in](http://www.ss.du.ac.in)  
**Lesson Plan**

<b>Name of Teacher</b>	Dr. Ekta Singh Prof. Sadhna Babbar	<b>Department</b>	Botany
<b>Course</b>	<b>B.Sc. Life Sciences</b>	<b>Semester</b>	I
<b>Paper</b>	Plant Diversity and Systematics	<b>Academic Year</b>	2023-2024
<b>Learning Objectives</b>			
This course is designed in a manner that gives a better understanding and knowledge regarding diversity of plants and microbes present on the planet and their evolutionary relationships.			
<b>Learning Outcomes</b>			
This course will be able to impart basic knowledge and understanding of: <ul style="list-style-type: none"><li>• the diversity of plants and microbes</li><li>• the possible relationships between each group</li><li>• their general characteristics</li><li>• approaches used for identification and classification of various groups of plants</li></ul>			

## Lesson Plan

Week No.	Theme/ Curriculum
1. (21 <sup>st</sup> -27 <sup>th</sup> Aug 23)	<p>Unit 1: Diversity of Life Classifying the diversity of life: Domains of Life –Eubacteria, Archaea and Eukaryotes (Dr. Ekta Singh)</p> <p>Unit 2: Microbes Viruses: General account; Replication, Lytic and Lysogenic cycle (Prof. Sadhna Babbar)</p>
2. (28 <sup>th</sup> -3 <sup>rd</sup> Sept 23)	<p>Unit 3: Algae Brief introduction of major classes: Blue-green, Green, Brown and Red algae (Dr. Ekta Singh)</p> <p>Unit 2 Bacteria: structure, wall less forms (L-forms, Mycoplasma) (Prof. Sadhna Babbar)</p>
3. (4 <sup>th</sup> -10 <sup>th</sup> Sept 23)	<p>Diagnostic features of identification; morphology, reproduction and classification with special reference to Nostoc and Volvox. (Dr. Ekta Singh)</p> <p>Unit 2 asexual reproduction (Prof. Sadhna Babbar)</p>
4. (11 <sup>th</sup> -17 <sup>th</sup> Sept 23)	<p>Diagnostic features of identification; morphology, reproduction and classification with special reference to Spirogyra. (Dr. Ekta Singh)</p> <p>Unit 2 genetic recombination (Prof. Sadhna Babbar)</p>
5. (18 <sup>th</sup> -24 <sup>th</sup> Sept 23)	<p><u>Unit 4: Fungi</u> Diagnostic features of identification; morphology, reproduction and classification with special reference to Rhizopus. (Dr. Ekta Singh)</p> <p>Unit 7: Aims, fundamental components of systematics, description, identification, nomenclature, phylogeny, biosystematics. (Prof. Sadhna Babbar)</p>

6. (25 <sup>th</sup> -1 <sup>th</sup> Oct 23)	<p><u>Unit 4: Fungi</u> Diagnostic features of identification; morphology, reproduction and classification with special reference to Penicillium. (Dr. Ekta Singh)</p> <p>Unit 8 Taxonomic Hierarchy- Concept of taxa and categories (Prof. Sadhna Babbar)</p>
7. (3 <sup>rd</sup> -8 <sup>th</sup> oct 23)	<p><u>Unit 4: Fungi</u> Diagnostic features of identification; morphology, reproduction and classification with special reference to Agaricus. (Dr. Ekta Singh)</p> <p>Unit 8 Botanical Nomenclature- principles and rules (Prof. Sadhna Babbar)</p>
8. (9 <sup>th</sup> -15 <sup>th</sup> oct 23)	<p><u>Unit 4: Fungi</u></p> <p>Lichens (a general account). (Dr. Ekta Singh)</p> <p>Unit 8</p> <p>Type method; Author citation; Valid publication; Rejection of names (Prof. Sadhna Babbar)</p>
9. (16 <sup>th</sup> -22 <sup>th</sup> Oct 23)	<p>Unit-5</p> <p>Characteristic features of identification; morphology and reproduction of Bryophytes (Marchantia, Funaria) (Dr. Ekta Singh)</p> <p>Unit 8</p> <p>Principle of priority and its limitations, names of hybrids and cultivars (Prof. Sadhna Babbar)</p>
10. (23 <sup>th</sup> -29 <sup>th</sup> Oct 23)	<p>UNIT-5</p> <p>Characteristic features of identification; morphology and reproduction of Pteridophytes (Pteris) (Dr. Ekta Singh)</p> <p>Unit 9</p> <p>Classification: Artificial, Natural and Phylogenetic. (Prof. Sadhna Babbar)</p>
11. (30 <sup>th</sup> -5 <sup>th</sup> Nov 23)	<p>Unit-5</p> <p>Characteristic features of identification; morphology and reproduction of Gymnosperms (Pinus) (Dr. Ekta Singh)</p> <p>Unit 9</p> <p>An outline of Bentham and Hooker's (up to series only) (Prof. Sadhna Babbar)</p>
12. (6 <sup>th</sup> -12 <sup>th</sup> Nov 23)	<p>Unit-6</p> <p>Diagnostic features, Structure of flower (Dr. Ekta Singh)</p> <p>Unit 9</p> <p>Engler and Prantl's (up to Subclasses) systems of classification and their merits and Demerits. (Prof. Sadhna Babbar)</p>
13. (13 <sup>th</sup> -19 <sup>th</sup> Nov 23)	<p>Unit-6</p> <p>types of inflorescence (Dr. Ekta Singh)</p> <p>Unit 9</p>

	APG System (Prof. Sadhna Babbar)
14. (20 <sup>th</sup> -26 <sup>th</sup> Nov 23)	Internal Assessment Test
15. (27 <sup>th</sup> -3 <sup>rd</sup> Dec 23)	Revision of all the topics
16. (4 <sup>th</sup> -6 <sup>th</sup> Dec 23)	Revision of all the topics
<b>Suggested Readings</b>	
Books	<ol style="list-style-type: none"> <li>1. Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, 4th edition. Singapore, John Wiley and Sons (Asia).</li> <li>2. Kumar, H.D. (1999). Introductory Phycology, 2nd edition. Delhi, Delhi: Affiliated EastWest. Press Pvt. Ltd.</li> <li>3. Bhatnagar, S.P., Moitra, A. (1996). Gymnosperms. New Delhi, Delhi: New Age International (P) Ltd. Publishers.</li> <li>4. Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Bryophyta. Prayagraj: U.P.: Central Book Depot.</li> <li>5. Pelczar, M.J. (2001). Microbiology, 5th edition. New Delhi, Delhi: Tata McGraw-Hill Co.</li> <li>6. Tortora, G.J., Funke, B.R., Case. C.L. (2007). Microbiology. San Francisco, U.S.A: Pearson Benjamin Cummings.</li> <li>7. Raven, P.H., Evert, R.F., Eichhorn, S.E. (2013). Biology of Plants, 8th edition, New York, NY: W.H. Freeman and Company.</li> <li>8. Sethi, I.K., Walia, S.K. (2018). Text book of Fungi and Their Allies. (2nd Edition), Medtech Publishers, Delhi.</li> <li>9. Vashishta, P.C., Sinha, A.K., Kumar, A. (2010). Pteridophyta. New Delhi, Delhi: S. Chand &amp; Co Ltd.</li> <li>10. Singh, G. (2020). Plant Systematics: Theory and Practice, 4th edition. CBS Publishers and Distributors, New Delhi.</li> <li>11. Simpson, M.G. (2020). Plant Systematics, 3rd edition, Elsevier Academic Press, San Diego, CA, U.S.A.</li> </ol>

	<p>12. Gupta R. 2011. Plant Taxonomy: past, present, and future. New Delhi: The Energy and resources Institute (TERI).</p> <p>13. Judd W.S., Campbell C.S., Kellogg, E. A., Stevens, P.F., Donoghue M.J. (2015). Plant Systematics: A Phylogenetic Approach 4th Edition Sinauer Associates, Oxford University Press. USA.</p>
<b>Online Resources (If Any)</b>	<p><a href="http://www.mobot.org/MOBOT/research/APweb/">http://www.mobot.org/MOBOT/research/APweb/</a>. (for APG IV classification)</p>
<p style="text-align: center;"><b>Assignment and Class Test Schedule for Semester</b></p> <p><b>Assignments: Submission by 6<sup>th</sup> November 2023</b></p> <p><b>Class Test: On the date as notified by the College</b></p>	