

**Four Year Undergraduate Program (2024-28)**  
**Department of Biotechnology**  
**Course Curriculum**

<b>Part A: Introduction</b>		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree/Honors)		Semester: I Sem
Session: 2024-2025		
1	Course Code	BTSC-01-P
2	Course Title	Cell Biology and Biochemistry
3	Course Type	Discipline Specific Course (DSC) - Practical
4	Pre-requisite (if any)	As per the program
5	Course Learning Outcomes (CLO)	After completing this practical course, the students will be able to – <ul style="list-style-type: none"> <li>• Identify animal and plant cells and its replication.</li> <li>• Understand karyogram.</li> <li>• Analyze biomolecules.</li> <li>• Develop expertise in chromatographic techniques.</li> </ul>
6	Credit Value	01 Credits Credit =30 Hours Laboratory or Field learning/Training
7	Total Marks	Max. Marks: 50      Min Passing Marks: 20
<b>Part B: Content of Course</b>		
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)		
Module	Topic (Course content)	No. of Period
Lab./Field Training/ Experiment Contents of Course	1. Preparation of mitotic index from plants and animals. 2. Preparation of slide of blood cells. 3. Preparation of slide of giant chromosomes. 4. Preparation of slide of epithelial cells. 5. Biochemical test of carbohydrates. 6. Biochemical test of lipids. 7. Biochemical test of proteins. 8. The action of salivary amylase on starch. 9. The action of trypsin on proteins. 10. Separation of amino acids by chromatography. 11. Separation of chlorophyll by chromatography.	30
Keywords	Mitotic index, Giant chromosome, biomolecules.	

• Part C - Learning Resource
<b>Text Books, Reference Books, Other Resources -</b>
<ul style="list-style-type: none"> <li>➤ Text Book-</li> <li>➤ Biotechnology- U Satyanarayana.</li> <li>➤ Cell Biology- C B Powar</li> <li>➤ Cell and Molecular Biology- P K Gupta</li> </ul>
<b>Reference Book-</b>
<ul style="list-style-type: none"> <li>• Practical Biochemistry- Wilson &amp; Walker.</li> <li>o Cell biology – C.B.Powar</li> </ul>

*B K*

*Anita*

*Neha*

*Powar*

*Sunjal*

*Shinde*