

Programme	BS Botany	Course Code	BOT-211L	Credit Hours	1
Course Title	Principles of Plant Biochemistry (Lab)				
Lab Course Contents					
<ul style="list-style-type: none"> • Determination of R_f value of Monosaccharides on a Paper Chromatogram. • Estimation of Reducing and Non-reducing sugars in plant material titrimetrically/spectrophotometrically. • Extraction and estimation of oil from plant material. • To determine Saponification number of fats. • Analysis of various lipids by TLC method. • Determination of R_f value of Amino Acids on a Paper Chromatogram. • To determine pK_a and Isoelectric point of an amino acid. • Estimation of soluble proteins. • Extraction of Nucleic acids from plant material and estimation by UV absorption or colour reactions. • Estimation of catalytic property of enzyme catalase or peroxidase extracted from a plant source. 					
Textbooks and Reading Material					
<ol style="list-style-type: none"> 1. Abdes, R. H., Frey, P. A. and Jencks W. P. (2004). Biochemistry, Jones and Bartlet, London. 2. Buchanan B. B, Gruissem W and Jones R. L. (2015). Biochemistry and Molecular Biology of Plants. John Wiley and Sons. 3. Bowsher, C., Steer, M., Tobin, A. (2008). Plant Biochemistry. - Garland Science, Taylor and Francis Group, New York. 4. Campbell, M. K. and F. Shawn. (2008). Biochemistry 6th Edition. 5. Chesworth, J. M., Strichbury T. and Scaife J. R. (1998). An introduction to agricultural biochemistry. Chapman and Hall, London. 6. Conn E. E. and Stumpf, P. K. (2009). Outlines of Biochemistry, John Wiley and Sons Inc. New York. 7. Dey, P. M. and Harborne, J. B. (1997). Plant Biochemistry. Harcourt Asia PTE Ltd. Singapore. 8. Goodwin T. W. and Mercer, E. I. (1997). Introduction to Plant Biochemistry. Pergamon Press, Oxford. 9. Heldt, H. W. (2008). Plant Biochemistry. 3rd Edition, Academic Press, U. K. 10. Lea, P. J. and Leegood, R. C. (1993). Plant Biochemistry and Molecular Biology. Wiley and Sons, New York. 11. Nelson, D. L and Cox M. M. (2021). Lehninger Principles of Biochemistry. 8th edition. W. H. Freeman and Company. New York. 12. Mckee, T. and Mckee, J. R. (1999). Biochemistry – An Introduction. WCB/McGraw-Hill, New York, Boston, USA. 13. Voet, D. Voet J. G. and Pratt, C. W. (2016). Fundamentals of Biochemistry: Life at the Molecular level, 5th Edition. John Wiley and Sons, New York. 14. Zubay G. (2003). Biochemistry, MacMillan Publishing Co., New York. 					
Teaching Learning Strategies					

- Lectures
- Group Discussion
- Lab work
- Seminars/ Workshop
- Assignments

Assignments: Types and Number with Calendar

- Lecture Based Examination (Objective and Subjective)
 - Assignments
 - Classroom discussion
 - Quizzes and Tests
- Self-assessments