

Programme	BS Chemistry	Course Code	BOT-119	Credit Hours	1
Course Title	Fundamentals of Genetics and Evolution (Lab)				
Lab Course Contents					
• Mitosis and Meiosis diagrams showing chromosomal Inheritance • Checker Board, Gamete formations, Monohybrid and dihybrid Patterns of Inheritance. • Proof of Ratios 9:3:3:1, 3:1 • Test Cross ratios, • Numerical problems leading to the discovery of Epistasis and Its types • Change in segregation Ratios due to incomplete dominance • Testing Hardy Weinberg Equilibrium • Estimation of Genetic distances to create a linkage map. • Three-point test cross, and gene order, Interference • Estimation of Gene frequencies in populations • Estimation of Genotype frequencies in populations					
Textbooks and Reading Material					
1. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., & Walter, P. (2002). Molecular biology of the cell (5th ed.). New York, NY: Garland Science. 2. Campbell, N. A., & Reece, J. B. (2008). Biology (8th ed.). San Francisco, CA: Pearson Education. 3. Freeman, S., & Herron, J. C. (2007). Evolutionary analysis (4th ed.). Upper Saddle River, NJ: Prentice Hall. 4. Hartl, D. L., & Jones, E. W. (2009). Genetics: Analysis of genes and genomes (7th ed.). Sudbury, MA: Jones and Bartlett Publishers. 5. Ridley, M. (2004). Evolution (3rd ed.). Malden, MA: Blackwell Publishing. 6. Barton, N. H., Briggs, D. E. G., Eisen, J. A., Goldstein, D. B., & Patel, N. H. (2017). <i>Evolution</i>. Oxford University Press. 7. Pierce, B. A. (2012). <i>Genetics: A conceptual approach</i> (4th ed.). W.H. Freeman and Company.					