

Programme	BS Botany	Course Code	BOT-311L	Credit Hours	2
Course Title	Biostatistics (Lab)				
Lab Course Contents					
<ul style="list-style-type: none"> • Data collection, arrangement of data in frequency table, calculating frequency, cumulative frequency and preparation of Ogive. • Calculating different measure of central tendency such as arithmetic means, harmonic mean, geometric mean, median and mode. • Calculation of variance and standard deviation from grouped and ungrouped data. • Calculating dispersion, relative dispersion, standard deviation, standard error, standard score and coefficient variation by hand and machine method. • Problems concerning probability, binomial distribution, T-test Chi square test. • Analysis of variance - one factor design. • Multiple Analyses of Variance. • Determination of correlation by constructing different types of graphs such as scatter diagram, linear positive correlation, linear perfect negative correlation, no correlation and curvilinear correlation (second degree polynomial, third degree polynomial). • Linear Regression and multiple regression models. • MS Excel, MSTAT or relevant statistical software packages. • Calculation of mean from grouped and ungrouped data. 					
Textbooks and Reading Material					
<ol style="list-style-type: none"> 1. Campbell, R. C. (1989). <i>Statistics for Biologists</i>. Cambridge University Press. 2. <i>Forthofer, R. N., Lee E. S., Hernandez, M.</i> (2011). <i>Biostatistics: A Guideto Design, Analysis and Discovery 2nd Ed.</i> Elsevier Inc. 3. Norman G.R., Streiner, D.L. (2000). <i>Biostatistics: The Bare Essentials</i>. B.C. Decker Inc. 4. Quinn, G., P., Keough M. J.(2002). <i>Experimental Design and Data Analysis for Biologists</i>. Cambridge University Press. 5. Rao, K.V. (2009). <i>Biostatistics: A Manual of Statistical Methods for Use in Health, Nutrition and Anthropology</i>. Jaypee Brothers Publishers. 6. Samuels, M. L. and Witmar, J. A. (2003). <i>Statistics for life sciences</i>. 3rd Edition. Cambridge University Press. 7. Triola, M. F. and Triola, M. M. (2005). <i>Biostatistics for Biological and Health Sciences</i>. Pearson Addison Wesley. 8. Zar, J. H. (2013). <i>Biostatistical analysis</i>, 4thEd. Dorling Kindersley Publ. Inc 					
Teaching Learning Strategies					
<ul style="list-style-type: none"> • Lectures • Group Discussion • Laboratory work • Seminar/ Workshop 					
Assignments: Types and Number with Calendar					
<ul style="list-style-type: none"> • Lecture Based Examination (Objective and Subjective) • Assignments • Class discussion • Quiz • Tests 					