STAT- 817 Categorical Data Analysis (3 Credit Hours)

1. Objectives

This course aims to introduce students the methods and procedures to handle, analyze and model the categorical data.

2. Course Contents

Introduction, describing two-way contingency tables, inference for two way contingency tables, models for binary response variables, Log-linear models, fitting Log-linear and Logit models, building and applying Log linear models, Probit and Logit models, multinomial response models for matched pairs, analyzing repeated categorical response data, logistic regression models and their analysis. Related applications/computations with R.

3. Recommended Books

i. Agresti, A. Categorical Data Analysis, (3rd edition)John Wiley and Sons. (2013).

ii. Bishop, Y.V.V., Fienberg, S.E. and Holland, P.W. Discrete Multivariate Analysis, MA: MIT Press Cambridge. (1975).

iii. Cox, D.R. and Snell, E.J. Analysis of Binary Data, Chapman and Hall, London. (1989).

iv. Powers, D.A. Xie, Y. Statistical Methods for Categorical Data Analysis, 2nd Ed.. (2006)

v. Simonof, J.S. Analyzing Categorical Data, Springer Science and Business. (2003).

vi. Outcomes: On successful completion of this course, students will know statistical methods and models for risk management.

4. Outcomes

On successful completion of this course, students will be able to handle, analyze and model the categorical data.