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2	-	-	-	2

COURSE TITLE: QUANTITATIVE TECHNIQUES

Course Code: MCH7 12-B

Credit Units: 2

Course Objective:

The aim of this course is to develop the understanding of the various Statistical models and Optimization Techniques used for analysis of data/information.

Course Outcomes:

On completion of this course, the scholars will be able to:

CO1. Understand various quantitative & statistical methods

CO2. Understand data and draw inference from data.

CO3. Calculate and interpret statistical values by using statistical tool (correlation & regression)

CO4. Demonstrate an ability to apply various statistical tools to solve research problems

Course Contents:

Section A

Data Analysis Techniques: Quantitative methods of data analysis; Hypothesis Testing - Parametric tests (Z-test, t-test, F-test, ANOVA), Non-parametric Tests (Chi-Square Test), Median test, Mann-Whitney U-test.

Section B

Tests of significance based on normal distributions; association of attributes. Bivariate analysis (Chi-square only), Regression Analysis.

Section C

Regression Correlation: Partial correlation, Simple Linear Regression Model, Least squares Method, Coefficient of Determination, Multiple Regression, Testing for Significance using Estimated Regression Equation, Logistic Regression.

Section D

Decision Analysis: Decision Analysis-Introduction, Structural equation modeling, Time series analysis.

References:

1. Morrison D.F. (1990) Multivariate Statistical Methods. New York: McGraw-Hill.
2. Neil J.S., Rasmussen K. (2007). Encyclopedia of Measurement and Statistics. Thousand Oaks, CA: SAGE Publications.
3. Scott W. M. (2002). Applied Logistic Regression Analysis. Thousand Oaks, CA: Sage Publications.
4. Darlington R.B., Weinberg S., Walberg H. (1973). Canonical variate analysis and related techniques. Review of Educational Research.
5. Gamst G., Lawrence S.M., Guarino A.J. (2008). Analysis of Variance Designs: A Conceptual and Computational Approach with SPSS and SAS. Cambridge University Press.
6. Peter Y.C., Paula M. (2002). Correlation: Parametric and Nonparametric Measures. Thousands Oaks, CA: Sage Publications.
7. Hair J.F., Black W.C., Babin B.J., Anderson R.E. (2010). Multivariate Data analysis. Pearson Prentice Hall.