MTH357 Applied Regression Analysis I

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

MTH357 Regression Analysis I will introduce students to the theory and practice of simple, multiple and polynomial regression. Many examples will be provided to illustrate the concepts of testing, estimation and statistical modeling using regression. There will be questions in the TMA which require students to apply regression techniques using R.

Topics:

- Linear Regression
- Tests of Significance
- Multiple Regression
- Estimation of Model Parameters
- Residual Analysis
- Formal Test for Lack of Fit
- Detecting Influential Obervations
- Measures of Influence
- Polynomial Models
- Nonparametric Regression
- Indicator Variables
- Multicollinearity

Textbooks:

Douglas C. Montgomery, Elizabeth A. Peck & G. Geoffrey Vining. (2012).: Introduction to Linear Regression Analysis (ebook) John Wiley
ISBN-13: 9781118627020

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ISBN-13: 9781118627020-AA

Learning Outcome:

- Apply linear and multilinear regression models.
- Interpret regression model parameters from data.
- Analyze data with regression models.
- Verify assumptions of various regression models are satisfied.
- Assess the fit of a regression model to data.
- Implement suitable strategies to correct regression model inadequacies.

Assessment Strategies:

Continuous Assessment Component	**Weightage (%)**
COMPUTER MARKED ASSIGNMENT	10
TUTOR-MARKED ASSIGNMENT	20
Sub-Total	**30**

Examinable Component	**Weightage (%)**
Written Exam	70
Sub-Total	**70**

Weightage Total	**100**