Minnesota State University Moorhead

MATH 336: Intermediate Probability and Statistics II

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:
- MATH 335 - Intermediate Probability and Statistics I

Corequisites: None

MnTC Goals: None

One and two sample tests of hypotheses, Chi-square tests, analysis of variance, completely randomized and randomized block designs, least square estimation, simple linear regression, multiple linear regression, hypotheses testing and confidence intervals for regression parameters, testing of models, model selection procedures, multicolinearity, introduction of qualitative variables, estimation, interpretation, and testing of hypotheses, checking validity of models.

B. COURSE EFFECTIVE DATES: 11/12/1996 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Testing of hypotheses and confidence intervals for the proportion of a population
2. Bivariate distributions and computation of covariance
3. Two sample techniques of hypotheses testing and confidence intervals for the mean, variance, and proportion.
4. Chi Square tests for proportions and goodness of fit tests
5. One-way and two-way analysis of variance
6. Post-Hoc analysis and testing for contrasts
7. Least square method, linear regression and correlation
8. Multiple linear regression and correlation
9. Error analysis
10. Testing of hypotheses and confidence intervals for regression parameters
11. Interaction of independent variables, multicolinarity, and remedial techniques.
12. Introduction of qualitative variables and testing
13. Extra Sum of Squares and partial correlation
14. Model selection procedures
15. Checking the validity of models and corrections

D. LEARNING OUTCOMES (General)

1. Learn the techniques of extracting information from sample data about parameters of various types of populations.
2. Make decisions about real world problems and applications using statistical techniques
3. Apply a variety of statistical models to real world problems and applications
4. Learn how to interpret results from data analysis

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted