# Minnesota State University Moorhead

# MATH 335: Intermediate Probability and Statistics I

## A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:
This course requires the following prerequisite
MATH 262 - Calculus II

Corequisites: None

MnTC Goals: None

Probability, probability distributions of discrete random variables, probability density functions, expected value and variance, sampling distributions and central limit theorem, point and interval estimation, and tests of hypotheses for the population mean. Simple linear regression, one factor ANOVA and ANOVA for regression.

## B. COURSE EFFECTIVE DATES: 02/02/2017 - Present

## C. OUTLINE OF MAJOR CONTENT AREAS

1. Descriptive statistics, probability and conditional probability
2. Discrete probability distributions: Uniform, Binomial, Poisson, Geometric, and Multinomial
3. Continuous probability distributions: Uniform, Exponential, Normal, and Gamma
4. Expectation, mean and variance
5. Sampling distribution of the sample mean: The central limit theorem
6. Point and interval estimation of the population mean
7. Tests of hypothesis for the population mean
8. Simple linear regression, one factor ANOVA and ANOVA for regression

## D. LEARNING OUTCOMES (General)

1. Understand and interpret probability in real world problems and applications.
2. Create statistical models and use them to solve real world problems.
3. Learn how to estimate unknown parameters of various populations and how to make decisions on the parameters.
4. Understand descriptive statistics, linear regression, one factor ANOVA and ANOVA for regression.

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

None

## F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

## G. SPECIAL INFORMATION

None noted