Course Name: Statistics and Probability **Course Code:** MATH262

General Information						
Course Code	**MATH262**	**Level/Year**	**3/2**	**Required (R) / Selected Elective (SE)**		**R**
Credit Hours	**Theory**	**3**	**Lab**	**-**	**Total**	**3**
Prerequisites	**MATH105**	**Course Coordinator**		Dr. Yashpal Singh		
Corequisites	**Nil**					

Course Description

This course introduces statistics and probability with applications. This course also covers several topics specifically Graphs, Measure of Central Tendency, Measure of Dispersion, Probability Theory, Random Variables, Probability Distributions, Correlation, and Linear Regression.

Course Objectives : On completion of the course, the student will be able to:

- Familiarize with the concepts and principles of Statistics, Graphs, and Probability.
- Describe concepts of Measures of Central Tendency and measure of Dispersion.
- Explain probability theory and methods to construct the probability distribution of random variables based on real-world situations to compute expectation and variance.

Course Contents

List of Topics

Chapter 1: Descriptive and Inferential Statistics

Chapter 2: Organizing Data

Chapter 3: Measures of Central Tendency

Chapter 4: Sample Spaces and Probability

Chapter 5: Probability Distributions

Chapter 6: Normal Distributions

Chapter 7: Scatter Plots and Correlation, Regression

Textbook

- Bluman, A. G. (2014). Elementary Statistics a Step-by-Step Approach.

Reference Materials

- Elementary Statistics Picturing the World, 5th Edition, Prentice Hall / Pearson, 2011.

Course Learning Outcomes

CLO#01	Distinguish mathematical concepts relevant to Descriptive and Inferential Statistics, Organizing Data, Measures of Central Tendency, Measures of Variation, Sample Spaces and Probability, Probability Distributions, Normal Distributions, Applications of the Normal Distribution, Scatter Plots and Correlation Regression.
CLO#02	Identify background science, features and structure of Descriptive and Inferential Statistics, Organizing Data, Measures of Central Tendency, Measures of Variation, Sample Spaces and Probability, Probability Distributions, Normal Distributions, Applications of the Normal Distribution, Scatter Plots, and Correlation Regression.
CLO#03	Explain notations and concepts required for the solution of Descriptive and Inferential Statistics, Organizing Data, Measures of Central Tendency, Measures of Variation, Sample Spaces and Probability, Probability Distributions, Normal Distributions, Applications of the Normal Distribution, Scatter Plots, and Correlation Regression.
CLO#04	Apply theoretical, computational, or practical aspects relevant to Descriptive and Inferential Statistics, Organizing Data, Measures of Central Tendency, Measures of Variation, Sample Spaces and Probability, Probability Distributions, Normal Distributions, Applications of Normal Distribution, Scatter Plots, and Correlation Regression.
CLO#05	Compute numerical quantities for Descriptive and Inferential Statistics, Organizing Data, Measures of Central Tendency, Measures of Variation, Sample Spaces and Probability, Probability Distributions, Normal Distributions, Applications of the Normal Distribution, Scatter Plots and Correlation Regression.
CLO#06	Solve mathematical problems using critical thinking in Descriptive and Inferential Statistics, Organizing Data, Measures of Central Tendency, Measures of Variation, Sample Spaces and Probability, Probability Distributions, Normal Distributions, Applications of the Normal Distribution, Scatter Plots, and Correlation Regression.
CLO#07	Cultivate a mathematical attitude and nurture the interest.
CLO#08	Leadership qualities in research and innovation with a sense of Commitment and accountability.
CLO#09	Inculcating values and ethics in thought, expression, and deed.