MATH 240-PROBABILTY AND STATISTICS I

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DURATION: May- August 2020

COURSE OUTLINE

This course seeks to introduce the student to participate effectively in predicting events on the basis of theory, experience and experiments using a background of calculus.

In particular, it exposes the student to day-to-day applications like sports, strategies, insurance options and making business.

The unit further seeks to impart to the student knowledge and skills in solving problems in the society.

COURSE CONTENT

Random variables and probability distributions.

-Definition of sample space, events and random variables.

-Discrete probability distributions.

- Continuous random variable

Mathematical expectation

- Some Theorems on Expectation.

-Variance and standard deviation.

Moments and Moment generating functions.

-Raw and central Moments

-Moment generating functions.

- Markov and Chebychev inequality.

Bivariate probability distributions.

- Independent random variables**.**

-Joint marginal and conditional distributions.

-Bivariate Expectation

-Bivariate moment generating functions

Special Probability distributions

-Bernoulli, Binomial, Poisson, Normal, Hypergeometric, Geometric, Uniform, Beta, Gamma, Exponential distributions.

REFERNCES

1. Hogg R.V & Craig A.T (2004) introduction to mathematical Statistics, 6th Edition, Prentice Hall

2. Walpole R.E (1968) Introduction to Statistics, Macmillan

3. Murray R.S, Schiller J.J &Srinivasan R (2009) SCHAUM'S ouT*lines* of PROBABILITY AND STATISTICS, Third Edition, Tata McGraw-Hill Education Private Limited, NEW DELHI.

4. Joshua M.Tebbs (2009) Probability Lecture notes, Department of statistics, University of Carolina.

5. Larry Wassermann (2004) All of statistics. A concise course in statistical inference.

Teaching Methodology

KSU E Learning Platform (45 hours)

Assessment

Three assignments to be done online.

Exam-70% to be done at end of semester.

University grading system will apply.