

Basic and Applied Science Courses (BA)

Basic and Applied Science Courses Group

BA 329 – Probability and Statistics

COURSE INFORMATION

Course Title: Probability and Statistics

Code: BA 329

Hours: Lecture – 2 Hrs. Tutorial – 2 Hrs. Credit –3.

Prerequisite: BA 224.

GRADING

Class Performance/Attendance: 10%

Midterm # 1/Assignments – (7th Week): 30%

Midterm # 2/Assignments – (12th Week): 20%

Final Exam: 40%

COURSE DESCRIPTION

Elementary probability – Conditional probability - Independent and dependent events –Bayes Theorem - Combinatorial analysis - Discrete probability distribution – density function- Continuous probability distribution – density function - Mathematical expectation, mean and variance - Moments skewness kurtosis and moments generating function - Special discrete distribution Bernoulli - Geometric and Poisson distributions - Special continuous distribution: Uniform – negative exponential - Normal distribution- Failure – time distributions - The exponential model in reliability- The exponential model in life testing - General worked Examples.

TEXT BOOK

Probability and statistics for engineering student by Prof. Dr. Mohmoud Gaber (copy)

REFERENCE BOOKS

Feller,W. (1968) An introduction to probability theory and its applications vol 13rd edn John Wiley, New York
 Ross, S.M York Ross S.M. (1989) Introduction to probability models (4 the dm) Academic press, Orlando.

COURSE AIM

This course provides a straightforward introduction to the theory of probability and some of its simple applications. In particular a principal purpose of the course is to help the student to solve problems

SPECIFIC OUTCOMES OF INSTRUCTION

- The Student should know the basic ideas as probability conditional probability and in dependence. It is assumed that the outcome has some knowledge of elementary set theory.
- The Student should know discrete and continuous random variable and for this a knowledge of the simpler techniques of calculus desirable the third objective is to study simple application to reliability and life testing

COURSE OUTLINE

- Week Number 1:* Elementary probability – Conditional probability.
- Week Number 2:* Independent and dependent events – Bayes Theorem.
- Week Number 3:* Combinatorial analysis.
- Week Number 4:* Discrete probability distribution – density function.
- Week Number 5:* Continuous probability distribution – density function.
- Week Number 6:* Mathematical expectation, mean and variance.
- Week Number 7:* Moments skewness kurtosis and moments generating function.
- Week Number 8:* Special discrete distribution Bernoulli.
- Week Number 9:* Geometric and Poisson distributions.
- Week Number 10:* Special continuous distribution: Uniform – negative exponential.
- Week Number 11:* Normal distribution.
- Week Number 12:* Failure – time distributions.
- Week Number 13:* The exponential model in reliability
- Week Number 14:* The exponential model in life testing
- Week Number 15:* General worked Examples
- Week Number 16:* Final Exam.

APPENDIX A-15

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr.Abdelrheem Abdelhameed.

Course Demand: *Required*