

**BA326 – Mathematics (6)**  
**COURSE INFORMATION**

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Course Title: Mathematics (6)

Code: BA326

Contact Hours (hours/week): Lecture – 2 Hrs.      Tutorial – 2 Hrs.      Credit – 3.

Prerequisite: BA124 (Math. 2)

Course Coordinator: Dr. Abd El Rhim Abd El Hamid

**GRADING**

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Class Performance/Attendance: 10%

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

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

Final Exam: 40%

**COURSE DESCRIPTION**

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An introduction to statistics and statistical analysis on data observation – Statistical measurements – Elementary probability, probability theorems – Conditional probability, Independent and dependent events – Total probability rule, Baye's theorem and enumeration methods – Discrete probability distribution: probability mass function – Continuous probability distribution: probability density function – Mathematical expectation, mean and variance – Special discrete distribution: Bernoulli , binomial , geometric and Poisson distributions – Special continuous distribution: Uniform, exponential and normal distribution – Discrete and Continuous joint probability

**TEXT BOOK**

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WALPLE, MYERS, MYERS, YE, Probability & Statistics for Engineers & Scientists, 9th edition, 2012

**COURSE AIM**

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This course provides a straightforward introduction on the Statistical analysis and the theory of probability without burdening the student with a great deal of measure theory. In particular, a principal purpose of the course is to help to build up the important skills necessary for problems solving.

**COURSE OBJECTIVES**

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The course has four main objectives. The first is how to make statistical analysis and calculating statistical measurements using computer programs like the minitab obIntroduction basic cost concepts and economic environment.

Through this course the student gets to know how:

- To make statistical analysis and calculating statistical measurements.
- To introduce the basic ideas of probability and conditional probability and its dependence. It is assumed that the outdone has some knowledge of elementary set theory.
- To introduce discrete and continues random variable and for this need knowledge of the simpler techniques of calculus desirable.
- To introduce the joint distribution in order to study simple application to random process and signal principles.

## COURSE OUTLINE

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*Week Number 1:* An introduction to Statistics and statistical analysis on data observation.

*Week Number 2:* Statistical measurements.

*Week Number 3:* Elementary probability-Probability theorems.

*Week Number 4:* Conditional probability-Independent and dependent events.

*Week Number 5:* Total probability rule- Bayes theorem and enumeration method.

*Week Number 6:* Discrete probability distribution-probability mass function.

*Week Number 7:* 7<sup>th</sup> week exam, continuous probability distribution- probability density function.

*Week Number 8:* Mathematical expectation, mean and variance.

*Week Number 9:* Special discrete distribution: Binomial, Bernoulli, Geometric and Poisson distributions.

*Week Number 10:* Special continuous distribution: uniform and exponential distribution.

*Week Number 11:* Special continuous distribution: normal distribution.

*Week Number 12:* 12<sup>th</sup> week exam, Discrete and Continuous joint probability distribution

*Week Number 13:* Random Process: Temporal Characteristics.

*Week Number 14:* Random Process: Spectral Characteristics.

*Week Number 15:* Revision.

*Week Number 16:* Final Exam.