University/Academy:	Arab Academy for Science, Technology and Maritime Transport
Faculty/Institute:	College of Computing & Information Technology
Program:	B. Sc. of Computer Science

Course title	Probability & Statistics
Course code	BA 203

Form No. (11A)
Knowledge and skills matrix for a course

Week	Course content	Knowledge	Intellectual skills	Professional skills	General skills
1	An introduction to Statistics and statistical analysis on data observation	• Define basic statistical concepts. .	• Apply basic statistical concepts • construct frequency distribution tables.	• Apply statistical measures in real life problems such as demography	• Present and defend solutions orally infront of professors and peers • Implement skills learned to undertake small-scale research problems
2	Statistical measurements	• Identify different statistical measures.	• calculate different statistical measures.		
3	Elementary Probability- Probability theorems	• express events using set theory. • list probability theorems .	• use set theory and probability theorems. • distinguish between different probability theorems		

Week	Course content	Knowledge	Intellectual skills	Professional skills	General skills
4	Conditional probability -- Independent and dependent events	• recognizing conditional probability problems. • identify independent and dependent events	• Differentiate between independent and dependent event in various problems. • distinguish between different probability theorems		
5	Total probability rule – Bayes Theorem and enumeration methods	• Recall Permutations and Combinations • Relate to different types of enumeration method. • recognizing Total probability – Bayes theorem problems.	• Use enumeration methods to calculate probability. • apply Total probability – Bayes theorem • distinguish between different probability theorems		
6	Discrete probability distribution – probability mass function	• Discuss Discrete probability distribution. • Express probability mass function and C.D.F. • Identify Discrete random variables	• Calculate P.m.f and C.D.F.		
7	Continuous probability distribution – probability density function	• Discuss Continuous probability distribution. • Express probability density function and C.D.F. • Identify Continuous random variables.	• Calculate P.d.f and C.D.F. • distinguish between discrete and continuous cases.		
8	Mathematical expectation, mean and variance	• recall Mathematical expectation, mean and variance.	• calculate mathematical expectation, mean and variance.		
9	Special discrete distribution: Bernoulli ,	• Discuss various Special discrete distribution.	• Solve problems base on various Special discrete	• Simulate the behaviour of	

Week	Course content	Knowledge	Intellectual skills	Professional skills	General skills
	Binomial , Geometric and Poisson distributions	• Recognize various Special discrete distribution.	distribution. • Distinguish and differentiate between various Special discrete distribution..	probability distributions in varrious applications	
10	Special continuous distribution: Uniform and exponential distribution	• Discuss various Special continuous distribution. • Recognize various Special continuous distribution.	• Solve problems base on various Special continuous distribution. • Distinguish and differentiate between various Special continuous distribution..		
11	Special continuous distribution: normal distribution	• Discuss various Special continuous distribution • Recognize various Special continuous distribution..	• Solve problems base on various Special continuous distribution. • Distinguish and differentiate between various Special continuous distribution...		
12	12th week exam	• .	•		
13	Discrete joint probability distribution	• Discuss and recognize discrete joint probability distribution. • Identify problems related to bivariate distributions	• Solve discrete bivariate problems. • Distinguish between independent and dependent R.Vs • evaluate correlation coefficient.		
14	Continuous joint probability distribution	• Discuss and recognize continuous joint probability distribution.	• Solve continuous bivariate problems. • Distinguish between		• Develop basic understanding of methods of data

Week	Course content	Knowledge	Intellectual skills	Professional skills	General skills
		• Identify problems related to bivariate distributions	independent and dependent R.Vs • evaluate correlation coefficient.		collection and analysis
15	Final revision	•	•		•

Course Instructor

Name:

Signature:

Head of Department

Name: **Dr. Essam Kosba**

Signature:

Dean - College of Computing and Information Technology

Name: **Prof. Dr. Khaled Mahar**

Signature:

Executive Manager of Quality Assurance Center - AASTMT

Name: **Prof. Dr. Aziz Ezzat**

Signature: