



QF04/0408-4.0E	Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Department of basic science
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Study plan No.	2024/2025		University Specialization		Bachelor of Mathematics	
Course No.	0420805		Course name		Statistic and Probability	
Credit Hours	3		Prerequisite/ Co-requisite		
Course type	<input type="checkbox"/> MANDATORY UNIVERSITY REQUIREMENT	<input type="checkbox"/> UNIVERSITY ELECTIVE REQUIREMENTS	<input checked="" type="checkbox"/> FACULTY MANDATORY REQUIREMENT	<input type="checkbox"/> Support course family requirements	<input type="checkbox"/> Mandatory requirements	<input type="checkbox"/> Elective requirements
Teaching style	<input type="checkbox"/> Full online learning		<input type="checkbox"/> Blended learning		<input checked="" type="checkbox"/> Traditional learning	
Teaching model	<input type="checkbox"/> 1 Synchronous: 1 asynchronous		<input type="checkbox"/> 1 face to face : 1 asynchronous		<input checked="" type="checkbox"/> 2 Traditional	

Faculty member and study divisions' information (to be filled in each semester by the subject instructor)

Name	Academic rank	Office No.	Phone No.	E-mail	
Division number	Time	Place	Number of students	Teaching style	Approved model

Brief description

Descriptive statistical measures, Updating descriptive measures and applications, Random experiment, probability concepts, Conditional probability, Univariate and bivariate random variables, Some discrete distributions (Binomial, Poisson, Geometric and hypergeometric), Continuous distribution (Normal), The central limit theorem, The distribution of the sample mean and the sample variance.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	Principles of Statistics, Prof. Mohammad Z. Raqab / Prof. Adnan M. Awad and Prof. Mufid M. Azzam, Fifth Edition				
Supportive learning resources (Books, databases, periodicals, software, applications, others)	1. Anderson , D.R, Sweeney, D.J. & Williams , T.A (1994). Introduction to Statistics: Concepts & Applications , 3 rd Edition, West Publishing Company, New York. 2. Bhattacharyya, G.K and Johnson , R.A. (1977). Statistical Concepts and Methods, John Wiley & Sons, New York.				
Supporting websites	• https://math.ntech.edu/e-stat/4470/index.html				
The physical environment for teaching	<input checked="" type="checkbox"/> Class room	<input type="checkbox"/> labs	<input type="checkbox"/> Virtual educational platform	<input type="checkbox"/> Others	
Necessary equipment and software					
Supporting people with special needs					
For technical support					



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Course learning outcomes (S= Skills, C= Competences K= Knowledge,)

No.	Course learning outcomes	The associated program learning output code
Knowledge		
K1	Distinguish between different methods of collecting, presenting and organizing data.	MK1
K2	Classify different types of data.	MK1
K3	Name measures of central tendency and their properties.	MK2
K4	Identify measures of dispersion and their properties.	MK2
K5	Describe random experiments using sample space and events.	MK3
K6	Explain probability concept and its axioms.	
K7	Recognize probability distributions of usual discrete and continuous random variables	MK4
Skills		
S1	Use statistical vocabulary to describe a statistical experiment.	MS1
S2	Calculate measures of central tendency and dispersion for different types of data.	MS1
S3	Compute skewness, kurtosis parameters and moments.	MS2
S4	Translate a random experiment to a probabilistic framework.	MS3
Competences		
C1	Use discrete and continuous random variables to compute probabilities.	MC3

Mechanisms for direct evaluation of learning outcomes

Type of assessment / learning style	Fully electronic learning	Blended learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
First/Second exam	30%	30%	30%	30%
Participation / practical applications	0	0	30%	30%
Asynchronous interactive activities	30%	30%	0	0
Final exam	40%	40%	40%	40%

Schedule of simultaneous / face-to-face encounters and their topics

Week	Subject	learning style	Reference
1	Statistical data, types of data, collecting data, frequency table, graphical presentation of data.	Lecture	4-35
2	Descriptive statistical measures.	Lecture	40-52
3	Comparing two observation, applications.	Lecture	69-80
4	Updating descriptive measures.	Lecture	81-102
5	Random experiment, probability concepts.	Lecture	164-185
6	Conditional probability.	Lecture	104-107
7	Univariate random variables.	Lecture	107-112



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8	Univariate random variables. Mid Exam	Lecture	112-117
9	Bivariate random variables.	Lecture	117-127
10	The Binomial distribution, the Poisson distribution.	Lecture	148-158
11	The Geometric distribution, the Hypergeometric distribution,	Lecture	163-170
12	The Normal distribution	Lecture	176-201
13	The Normal approximation to the Binomial distribution, the central limit theorem.	Lecture	201-219
14	The distribution of the sample mean, The distribution of the sample variance.	Lecture	260- 265
15	The distribution of the sample proportion.	Lecture	266-279
16	Final Exam		