فكر حضاري وحوار متمدن
Civilized Thought …Civilized Dialogue

" عراقة وجودة"
"Tradition and Quality"

QF04/0408-4.0E	**Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Department of Basic Sciences**

Study plan No.	**2024/2025**	**University Specialization**	**Bachelor of Mathematics**
Course No.	**0420808**	**Course name**	Biostatistics
Credit Hours	**2**	**Prerequisite/ Co-requisite**	**None**
Course type	☐ MANDATORY UNIVERSITY REQUIREMENT ☐ UNIVERSITY ELECTIVE REQUIREMENTS	✓ FACULTY MANDATORY REQUIREMENT ☐ Support course family requirements	☐ Mandatory requirements ☐ Elective requirements
Teaching style	☐ Full online learning	✓ Blended learning	☐ Traditional learning
Teaching model	☐ 1 Synchronous: 1 asynchronous	✓ 1 face to face : 1 asynchronous	☐ 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**
Dr. Hamza Alzaareer	Associate Professor	9130	423	h.alzaareer@zuj.edu.jo

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).

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	Biostatistics: Basic Concepts and Methodology for the Health Sciences by Wayne W. Daniel., 9th edition.
Supportive learning resources (Books, databases, periodicals, software, applications, others)	1. Bernard Rosner. Fundamentals of Biostatistics. 2. Pagano, Gauvreau. Principles of Biostatistics, 2nd edition.
Supporting websites	https://math.tntech.edu/e-stat/4470/index.html
The physical environment for teaching	✓ Class room ☐ labs ☐ Virtual educational platform ☐ 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	Analyze 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.	MK3
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	Translate a random experiment to a probabilistic framework..	**MS2**
Competences		
C1	Cooperate to work effectively in the group assignments.	MC1
C2	Develop the individual's ability to communicate and interact with other courses and research.	MC2

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)
Mid Exam	30%	30%	**30%**	30%
Participation / practical applications	0	0	**20%**	30%
Asynchronous interactive activities	30%	30%	**0**	0
Final exam	40%	40%	**50%**	40%

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

	Subject	learning style	Reference
1	Introduction to biostatistics, types of data	Lecture 1	**2-13**
2	Frequency tables, and graphical representation.	Lecture 2	**19-28**

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3	Measures of central tendency: mean, median, mode.	Lecture 3+4	**38-41**
4	Measures of dispersion: range, variance, standard deviation.	Lecture 5+6	**43-46**
5	Measures of dispersion: standard deviation, coefficient of variation.	Lecture 7 +8	**43-46**
6	Properties of central tendency and variation	Lecture 9	**65-83**
7	Mid Exam	Lecture	
8	probability concepts	Lecture 10	**65-38**
9	Conditional probability	Lecture 11	
10	Univariate and bivariate random variables	Lecture 12	**93-112**
11	Discrete probability distributions, cumulative probability distribution	Lecture 13	**93-112**
12	Binomial and Poisson distributions and their mean and variance.	Lecture 14	**114-128**
13	Continuous probability distributions, Normal distribution	Lecture 15	**135-141**
14	Review		
15	**Final Exam**		

Schedule of asynchronous interactive activities (in the case of e-learning and blended learning)

Week	Task / activity	Reference	Expected results
1	Assignments 1	Ref.2	Submitting pdf document on the virtual educational platform
2	Work sheet 1	Internet sources	Pdf document
3	Assignments 2	Text Book	Submitting pdf document on the virtual educational platform
4	Assignments 3	Ref.2	Submitting pdf document on the virtual educational platform
5	Assignments 4	Ref.2	Submitting pdf document on the virtual educational platform
6	Assignments 5	Text Book	Submitting pdf document on the virtual educational platform
7	Video 1	E-learning	Discussion in the class
8	Assignments 6	Lecture note	Submit a pdf or word sheet
9	Assignments 7	Text Book	Submitting pdf document on the virtual educational platform
10	Assignments 8	Text Book	Submitting pdf document on the virtual educational platform
11	Assignments 9	Lecture note	Submit a pdf or word sheet
12	Quiz 1	E-learning	Submitting pdf on the virtual educational platform
13	Assignments 10	Lecture note	Submit a pdf or word sheet

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14	Video 2	E-learning	Discussion in the class
15	Assignments 11	Lecture note	Submitting pdf document on the virtual educational platform