

Study plan No.	2021/2022		University Specialization		Master of Mathematics	
Course No.	0101751		Course name		Mathematical Statistics	
Credit Hours	3		Prerequisite/ Co-requisite		-	
Course type	<input type="checkbox"/> MANDATORY UNIVERSITY REQUIREMENT	<input type="checkbox"/> UNIVERSITY ELECTIVE REQUIREMENTS	<input type="checkbox"/> FACULTY MANDATORY REQUIREMENT	<input type="checkbox"/> Support course family requirements	<input checked="" 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	
Dr. Ma'mon AbuHammad	Assistant Professor	127	380	m.abuhammad@zuj.edu.jo	
Division number	Time	Place	Number of students	Teaching style	Approved model

Brief description

Univariate and multivariate distribution theory, sufficient statistics, minimal sufficient statistics, completeness, methods of point estimation and properties of point estimators, confidence intervals, testing hypotheses, Neman-Pearson lemma, randomized tests, uniformly most powerful test, likelihood ratio tests, mimimax methods.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	1) Introduction to Probability and Mathematical Statistics, 2nd edition. By Bain, Lee, J. and Engelhardt, Max. Publisher Duxbury Press 1987.				
Supportive learning resources (Books, databases, periodicals, software, applications, others)	<ol style="list-style-type: none"> 1) Beaumont, G.P. (1980), Intermediate Mathematical Statistics, Chapman and Hall, London. 2) Wasan M.T. (1970), Parametric Estimation, McGraw-Hill, New York. 3) Bickel, P.J. and Doksum, K.A. (1977), Mathematical Statistics, Holden-day, San Francisco. 4) Casella, G. and Berger, R. L. (2002), Statistical Inference, 2nd edition, Duxbury, Australia. 5) Zacks, S. (1981), Parametric Statistical Inference: Basic Theory and Modern Approaches, Pergamon Press, Oxford. 6) Mukhopadhyay, P. (1996), Mathematical Statistics, New central book agency, Calcutta. 7) Ferguson, T. S. (1967), Mathematical Statistics: A Decision Theoretic Approach, Academic Press, New York. 				
Supporting websites	https://www.youtube.com/channel/UCNADIwCkYj4pXH8blfIVOqw				
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					

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

No.	Course learning outcomes	The associated program learning output code
Knowledge		
K1	Setting up the probability of distributions.	MK1
K2	Predicting the point estimate of the parameters.	MK2
K3	Select the best point estimate.	MK3
K4	Predicting the interval estimate of the parameters.	MK4
K6	Designing the test of hypothesis of the parameter.	MK6
Skills		
S1	Classify the estimate of parameters according to properties.	MS1
S2	Estimate the sample size.	MS2
S3	Explain a decision about the hypothesis.	MS3
Competences		
C1	Finding the relation between the theory of probability and applied statistics.	MC2
C2	Develop the individual's ability to communicate and interact with other mathematical courses.	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)
First/Second exam	30%	30%	40%	30%
Participation / practical applications	0	0	10%	30%
Asynchronous interactive activities	30%	30%	0	0
Final exam	40%	40%	50%	40%

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

Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	3	Ch7 Limiting distribution	231-240	Text 1
02	3	Ch7 Limiting distribution	240-247	Text 1
03	3	Ch7 Limiting distribution	247-259	Text 1
04	3	Ch8 Statistics and sampling distribution	263-267	Text 1
05	3	Ch8 Statistics and sampling distribution	267-280	Text 1
06	3	Ch8 Statistics and sampling distribution	280-286	Text 1
07	3	Ch9 Point estimation	288-311	Text 1
08	3		Midterm Exam	
09	3	Ch9 Point estimation	311-319	Text 1
10	3	Ch9 Point estimation	319-327	Text 1

11	3	Ch10 Sufficiency and completeness	337- 353	Text 1
12	3	Ch11 Interval Estimation	358-369	Text 1
13	3	Ch11 Interval Estimation	377- 384	Text 1
14	3	Ch12 Testing hypothesis	389- 406	Text 1
15	3	Ch12 Testing hypothesis	406-428	Text 1
16	2		Final Exam 50%	

Theoretical course evaluation methods and weight	Participation	20%	Practical (clinical) course evaluation methods	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%
	(Home works, Projects)			
	Midterm Exam	30%		
	Final exam	50%		

Approved by head of department		Date of approval	22/1/2021
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	Dr. Ma'mon Abu Hammad	Office Number	9127
Phone number (extension)	338	Email	m.abuhammad@zuj.edu.jo
Office hours	Sun., Tue., Thu. : 19- 20		Mon., Wed. : 19-20

QF01/0408-4.0E	Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Mathematics Department
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