هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title: Statistics (إحصاء)
Course Code: STAT 100
Program: (Cross-Listed Course) - Civil Engineering Program - Electrical Engineering Program - Renewable Energy Program - Architecture Program - Interior Design Program - Cybersecurity Program
Department: (Cross-Listed Course) - Civil Engineering Department - Electrical Engineering Department - Architecture Department - Cybersecurity Department
College: College of Engineering and Information Technology
Institution: Onaizah Private Colleges
Version: Second Version
Last Revision Date: 2023-04-06

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	2 Credit Hours
2. Course type a. University ☐ College ☒ Department ☐ Track ☐ Others ☐ b. Required ☒ Elective ☐	
3. Level/year at which this course is offered:	First Level / First Year
4. Course general Description This course helps pre- engineering students to understand the basic facts, principles, theories and methods of general statistics.	
5. Pre-requirements for this course (if any): None	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s) The objectives of the course are to identify the concepts of probabilities and statistics, calculate measures of central tendency and measures of dispersion and calculate the marginal and conditional probabilities of events.	

1. Teaching mode

No.	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

2. Contact Hours (based on the academic semester)

No.	Activity	Contact Hours
1	Lectures	30
2	Laboratory/Studio	
3	Field	
4	Tutorial	15
5	Others (specify)	
Total		**45**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
STAT 100.C LO.K.1	Identify the concepts of probabilities and statistics to solve electrical engineering problems	K.1(الهندسة برنامج الكهربائية Electrical Engineering)	Primary: Lecture Additional: Video	Formative: Homework Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.K.2	Identify the concepts of probabilities and statistics to define basic renewable energy concepts, principles, and theories related to mathematical concepts	K.1(هندسة برنامج المتجددة الطاقة Renewable Energy)	Primary: Lecture Additional: Tutorial	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.K.3	Identify the concepts of probabilities and statistics to be used in research methodologies for cybersecurity to reach satisfactory results	K.2(الأمن برنامج السيبرانى Cybersecurity)	Primary: Lecture Additional: Tutorial	Formative: Essay (Individual or Group) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.K.4	Identify the concepts of probabilities and statistics to solve CE engineering problems	K.1(الهندسة برنامج المدنية Civil Engineering)	Primary: Lecture Additional: Video	Formative: Quiz (Online or F2F) Summative: Written Exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
				(MCQ or Essay / F2F or Online)
2.0	**Skills**			
STAT 100.C LO.S.1	Calculate measures of central tendency and measures of dispersion for use in research methodologies for interior design to reach satisfactory results	S.2(التصميم برنامج الداخلى Interior Design)	Primary: Interactive Lecture \ Demonstration Additional: Discussion (or similar active learning strategies)	Formative: Research Assessment (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.S.2	Calculate the marginal and conditional probabilities of events. for use in producing drawings and documents for interior design	S.5(التصميم برنامج الداخلى Interior Design)	Primary: Interactive Lecture \ Demonstration Additional: Video	Formative: Research Assessment (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.S.3	Calculate measures of central tendency and measures of dispersion for use in solving architectural problems and aiding in research	S.2(العمارة برنامج Architecture)	Primary: Interactive Lecture \ Demonstration Additional: Discussion (or similar active learning strategies)	Formative: Research Assessment (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.S.4	Calculate measures of central tendency and measures of	S.4(الهندسة برنامج الكهربائية Electrical Engineering)	Primary: Interactive Lecture \ Demonstration Additional: Video	Formative: Research Assessment (Rubric)

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	dispersion for use in examining the behavior of electrical systems and to assist in research			Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.S.5	Calculate measures of central tendency and measures of dispersion for use in critical evaluation of solutions to renewable energy problems	S.5(هندسة برنامج المتجددة الطاقة Renewable Energy)	Primary: Interactive Lecture \ Demonstration Additional: Discussion (or similar active learning strategies)	Formative: Presentation (Individual or Group) (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.S.6	Calculate measures of central tendency and measures of dispersion for use in the critical analysis of the behavior of cybersecurity threats and vulnerabilities	S.3(الأمن برنامج السيبرانى Cybersecurity)	Primary: Interactive Lecture \ Demonstration Additional: Video	Formative: Research Assessment (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
STAT 100.C LO.S.7	Calculate measures of central tendency and measures of dispersion for use in the critical analysis of civil engineering	S.3(الهندسة برنامج المدنية Civil Engineering)	Primary: Interactive Lecture \ Demonstration Additional: Discussion (or similar active learning strategies)	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	problems and solutions			
3.0	Values, Autonomy, and Responsibility			
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C. Course Content

No.	List of Topics	Contact Hours
1	Introduction.	3
2	Organizing and Graphing Quantitative Data.	3
3	Cumulative Frequency Distributions, Stem-and-Leaf displays.	3
4	Measures of Central Tendency for Ungrouped Data.	3
5	Measures of Central Tendency for grouped Data.	3
6	Measures of Dispersion for Ungrouped Data (Mean Variance and Standard Deviation).	3
7	Mean, Variance, and Standard Deviation for Grouped Data.	3
8	Experiment, Outcome and Sample Space, Calculating Probability.	3
9	Marginal Probability, Conditional Probability and Related Probability Concepts.	3
10	Intersection of Events and the Multiplication Rule.	3
11	Union of Events and the Addition Rule.	3
12	Counting Rule, Factorials, Combinations, and Permutations, Random variables.	3
13	Continuous Probability Distribution and Normal Probability Distribution, Standardizing a Normal Distribution.	3
14	Simple Linear Regression.	3
15	Revision.	3
Total		**45**

D. Students Assessment Activities

No.	Assessment Activities*	Assessment Timing (in Week No.)	Percentage of Total Assessment Score
1	Quiz (Online or F2F)	4th – 10th	10%
2	Research Assessment (Rubric)	13th	5%
3	Presentation (Individual or Group) (Rubric)	6th	2.5%
4	Essay (Individual or Group)	10th	2.5%
5	Written Exam (MCQ or Essay / F2F or Online)	9th – 16th	70%
6	Homework	2nd – 12th	10%
			100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	- Introductory Statistics, 8th edition, by Prem S. Mann, ©2011. - John Wiley & Sons publishing, ISBN: 978-0-470-50583-0.
Supportive References	- "Statistics for Business and Economics, 13th edition, by David R. Anderson, Dennis J. Sweeney, and Thomas A. Williams, ©2019, Cengage publishing, ISBN: 978-1-337-40615-2".
Electronic Materials	- Course materials are uploaded to the course page on https://elearn.oc.edu.sa to be available for the students.
Other Learning Materials	None.

2. Required Facilities and Equipment

Items	Resources
Facilities (Classrooms, Laboratories, Exhibition Rooms, Simulation Rooms, etc.)	Lecture Room with enough space (at least 5mx7m) and supported with at least 60 seats
Technology Equipment (Projector, Smart Board, Software)	White Board, Data Show and Overhead projector. Desktop supported with Microsoft office.
Other Equipment (Depending on the nature of the specialty)	None.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer Reviewer	Direct (peer classroom observation according to the approved Rubric)
Effectiveness of students' assessment	Faculty/Instructor	Direct (analysis of CLOs assessment results and grade distributions)
Quality of learning resources	Students	Indirect (course evaluation survey)
The extent to which CLOs have been achieved	Faculty/Instructor	Direct (CLOs assessment and analysis of results according to CLOs targets)
	Students	Indirect (Students through course evaluation survey)
Commitment to learning and teaching strategies and assessment methods included in the program and course specifications	Peer Reviewer	Direct (Peer- classroom observation according to the approved Rubric in OC-QMS)
	Department Chair through Students Focus Groups	Indirect (Chair – survey questions to a focus group of students according to OC QMS)
Action Plan Continuity (Closing the Loop)	QAC (Quality Assurance Committee)	Direct (periodic review of course reports and submitting comments to course instructor/coordinator)
Instructor's Support to Students	Students	Indirect (course evaluation survey)

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Department of Civil Engineering
REFERENCE NO.	10
DATE	2023-05-23

Learning outcomes of this course, as well as CLOs/Teaching Strategies/Assessment Methods matrix have been evaluated and reviewed by multiple QC parties according to QC-QMS. You can access results of these final reviews by scanning the QR code on the right, which contains a link to the reviews on QC-E-QMS.

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