Ministry of Higher Education and Scientific Research
Supervision and Scientific Evaluation Authority
Department of Quality Assurance and Academic Accreditation

Academic Program Description Form for Colleges and Institutes Academic Year

University: Shatt Al-Arab
College/Institute: Engineering
Scientific Department: Civil
Date of Form Completion: 01/09/2024

Signature
Name of Head of Department:

Asst. Lecturer Nabeel Najm Abdullah

Signature

Name of Scientific Assistant: Dr. Jawad Kadhim

Reviewed by:
Quality Assurance and University Performance Division
Name of Division Director: Dr. Jasem Mohsen Yasser

Signature:

الدكتور
جاسم محسن ياسر
Dr.Jasim Al-Battat

أ.م.د. احسان قاسم محمد
عميد كلية الهندسة

Dean's Approval

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Statistics**			**Module Delivery**	
Module Type	**Supportive**			☐ **Theory** ✓ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE227**				
ECTS Credits	**4**				
SWL (hr/sem)	**45**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Nabil Najm		**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**	M. Sc.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/09/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The module aims to present the basic of engineering statistics by analyzing, organizing and describing data in tables and drawings, knowing the measures of dispersion and central tendency, in addition to knowing the theory of probability and inference from the data to make decisions and linking them to engineering reality.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	A- Knowledge and Understanding 1- Understand the importance of statistics and its divisions. 2- Learn how to show and represent statistical data with tables or graphics. 3- Identify the most important measures of central tendency and dispersion of data. 4- Learn about probability theory and its different distributions. 5- Identifying the design of samples, their estimation, and knowledge of their properties. B. Subject-specific skills 1- Analyze, organize, and describe data in tables and/or curves. 2- Describe the averages of the data and methods of measuring their dispersion. 3- Engineering inference from the statistical data to take the appropriate decision. 4- Linking information to engineering reality.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Weekly homework and daily and weekly quizzes. Giving assignments and activities in the classroom. As well as guiding students to the important scientific sources and taking some exercises to practice on them.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	INTRODUCTION TO ENGINEERING STATISTICS (Brief definition in statistics)
Week 2	PRESENTATION OF STATISTICS DATA cont. (Frequency distributions, Frequency distributions table)
Week 3	PRESENTATION OF STATISTICS DATA (Cumulative frequency distribution, Graphical representation of data)

Week 4	Graphical representation of data (Cumulative frequency curves, Histogram, Frequency polygon)
Week 5	MEASURES OF CENTRAL LOCATION (Measures of center, four types)
Week 6	MEASURES OF DISPERSION, THE PROBABILITY (Measures of dispersion, four types, Probability theory)
Week 7	THE PROBABILITY cont. (Combinations of Three or More Events)
Week 8	THE PROBABILITY cont. (Probability theory rules, Conditional Probability, Bayes' theorems)
Week 9	Geometric Probability (Geometric Probability examples)
Week 10	PROBABILITY DISTRIBUTION (Discrete probability distribution, Discrete Uniform Distribution)
Week 11	PROBABILITY DISTRIBUTION, cont. (Geometric Distribution, Negative binomial Distribution, Binomial Distribution)
Week 12	Continuous Probability Distributions, Continuous Uniform Distributions, Normal Distributions, Exponential Distribution)
Week 13	SAMPLING DISTRIBUTION (Sampling Distribution of the Sample Mean, Central Limit Theorem, applications)
Week 14	THE EXPECTATION (Expectation properties and Moments)
Week 15	THE ESTIMATION (point estimator, interval estimator)
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	

Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Statistics with engineering applications Entry to statistics	--
Recommended Texts	Fundamentals of Behavioral Statistics ,1988	--
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.