

Module (Course Syllabus) Catalogue 2022-2023

College/ Institute	Erbil Technical Engineering College	
Department	Civil Engineering	
Module Name	Engineering Statistics	
Module Code	ENS405	
Degree	Technical Diploma <input type="checkbox"/>	Bachelor <input checked="" type="checkbox"/>
	High Diploma <input type="checkbox"/>	Master <input type="checkbox"/>
		PhD <input type="checkbox"/>
Semester	4 st Semester	
Qualification	B.SC	
Scientific Title	Engineer	
ECTS (Credits)	5	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	3 hours	8:30 – 11:30
Weekly hours (Theory)	(3) hr Class	(128) Total hrs Workload
Weekly hours (Practical)	(0) hr Class	(0) Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Dilveen Hassan Omar	
E-Mail & Mobile NO.	Dilveen.omar@epu.edu.iq	
Lecturer (Practical)	-	
E-Mail & Mobile NO.	-	
Websites		

Course Book

<p>Course Description</p>	<p>Statistics are important in many fields of engineering such as how to collecting data and facts about the phenomenon to obtain data, uses the charts, Graphical presentation, there is different statistical methods and practical applications statistical analysis to solve various problems & using (Statistical Package for the Social Sciences) SPSS program. SPSS is important program for students in civil engineering, it helps students organize information in tables, use different applications on them & Microsoft power point to presentations & seminars for your final project.</p>
<p>Course Objectives</p>	<ul style="list-style-type: none"> ▪ Learn the concept of statistics to collect data to get the digital data or descriptive by accuracy for a particular phenomenon, ▪ Learn the hypothesis specific and organizing, tabulating the data. This data is sorted every phenomenon in the form of the group, to classified on the basis using the statistical relationships. ▪ Present data to the Graphical presentation. There are many ways to graph data, histograms, frequency polygon, bar chart. ▪ Using statistical laws and their practical applications by Measure of Central Tendency, Measures of dispersion General rules in probability (Combinations, Permutation), Basic concepts of probability & Correlation Simple linear regression. ▪ How to extract the numerical values, meanings and interpretations to get the results. ▪ Using the statistical inferential deals with the forecasting estimation, conclusions, results by visual diagrams & SPSS program to do the project & presentation the seminar by Microsoft office power point.
<p>Student's Obligation</p>	<p>Students must attend all lectures. They also do quick daily exams. Furthermore, they are required to do their homework and duties that will be assigned to them. They must do seminars and projects. Finally, they must pass the final and midterm exam.</p>
<p>Required Learning Materials</p>	<p>During lecturing the data show is used for showing lecture notes using power point program while the white board is used for explanation and solving problems and using software to analysis data.</p>

Evaluation	Task		Weight (Marks)	Due Week	Relevant Learning Outcome
	Paper Review		N/A	-	-
	Assignments	Homework	10%	10	1,2,3,4,5
		Class Activity	2%	4	1,2,3,4,5
		Report	8%	2	1,2,3,4,5
		Seminar	N/A	-	-
		Essay	N/A	-	-
		Project	8%	10	1,2,3,4,5,6
	Quiz		8%	2	2,3,4
	Lab.		N/A	-	-
	Midterm Exam		24%	1	6
Final Exam		40%	1	6	
Total		100%			
Specific Learning Outcome:	<p>At the end of course, participants should be able to:</p> <ol style="list-style-type: none"> 1- Introduce the statistics and how to collecting data and facts about the phenomenon, the Process of data collection, through the field sources or historical sources then organizing & tabulating present data to the Graphical presentation, histograms, frequency polygon, bar chart, ... 2- Organize & tabulate the data for facilitates the process of analysis to using the Frequency Distribution Table. 3- Use the practical applications by Measure of Central Tendency, Measures of dispersion, standard deviation and variance. 4- Use General rules in probability (Combinations, Permutation) & Basic concepts of probability 5- Apply on binomial, normal, T- distribution 6- Use the statistical relationships statistical laws, to extract the numerical values, meanings and interpretations to find the Correlation, Simple linear regression to get the results. different statistical methods and practical applications statistical analysis to solve various problems by using Statistical SPSS program, to do the project & presentation the seminar by Microsoft office power point. 				

Course References:

- 1) Michael J. Crawley, "statistics an introduction using R ", imperial college London, UK, 2005.
- 2) Willian Navidi, "statistics for engineers & scientists ", 2011.
- 3) Jessica Mutts, 2010, **Mind on Statistics**, University of California, Irvine, Fourth Edition.
- 4) Murray R Spiegle, "Theory and Problems of Statistics" McGraw-Hill Book Company, 1972.
- 5) SPSS: Stats Practically Short and Sample, 2009, Sidney Tyrell and bookboon.com, ISBN 978-87-7681-474-8, 1st sediton.
- 6) 1989. بغداد جامعة " الاحصاء " هرmez حنا وامير د . محمود المشهداني
- 7) 2008. و البدايه دار " الاحصاء اساسيات " عوض مال مراد

Course Topics (Theory)	Week	Learning Outcome
Introduction of statistics	1	1
Sampling	2	1,2
Measures of Location and Measures of Variation	3	1,2
Frequency distribution	4	3
Graphical Presentation (Histogram, frequency polygon)	5	3
Probabilities of simple	6	4
Permutations & Combinations	7	4
Binomial distribution , poisons distribution & normal distribution	8	5
Correlation and regression	9	5
Analysis of linear regression	10	6
Normal distribution	11	6
Computer application	12	6
Practical Topics	Week	Learning Outcome

Questions Example Design

Q1. Find the frequency distribution table?
(24M)

Q2. Draw histogram for frequency distribution table.
Find $p(A / B)$?

Extra notes:

External Evaluator

As assistant Professor I have reviewed the Course Book related to the subject of statistics for second year, fourth semester, Department of Civil Engineering, College of Technology, I found that the course Book is very good describing the aim and objectives of the subject. Moreover it is covering all the required syllabus and contents of the course and describes successfully the aspects related to the course which is approved by the department.



**Assistant Professor
Salar Khudhur Hussein**