



Course Specification

— (Bachelor)

Course Title: Regression Analysis

Course Code: STS 223

Program: Applied Statistics & Data Management

Department: Mathematics

College: College of Science

Institution: Majmaah University, Saudi Arabia

Version: 2023

Last Revision Date: 28 September 2023



Table of Contents

A. General information about the course:	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	4
C. Course Content	5
D. Students Assessment Activities	5
E. Learning Resources and Facilities	6
F. Assessment of Course Quality	6
G. Specification Approval	7



A. General information about the course:

1. Course Identification

1. Credit hours: (...3(2+2).....)

2. Course type

A. University College Department Track Others

B. Required Elective

3. Level/year at which this course is offered: (.....4th.....)

4. Course general Description:

5. Pre-requirements for this course (if any):

Statistical Method (STS-132)

6. Co-requisites for this course (if any):

NA

7. Course Main Objective(s):

- Interpret results from specific statistical model
- Understand the basic linear regression models in statistics

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	25	55.56%
2	E-learning	20	44.44%
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4	Distance learning		





3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	25
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	20
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			
1.1	Basic ideas of regression analysis	K4	We first introduce new notions, give examples from the simple ones	We first introduce new notions, give examples from the simple ones
1.2	simple regression models, multiple regression models,	K4	Explanations and examples given in lectures.	Oral discussion
...				
2.0	Skills			
2.1	2.1	Explain ANOVA or fixed effect models and mixed effect modes,	S2	Explanations and examples given in lectures.
2.2	2.2	Explain logistical and generalized linear model	S2	Guidance and supervision of the work developed in tutorial classes.
...				
3.0	Values, autonomy, and responsibility			
3.1	Other topics related to regression analysis such as multi	S4	By using many examples	Homework • Quiz





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	collinearity; residuals, outliers and influential observations;			<ul style="list-style-type: none"> Midterms Final Exams
3.2	Model selection procedures will also be covered in the class.	S4	Direct teaching: Lectures Aimed teaching: Discovery and oral questions Indirect teaching: Cooperative Learning	Homework <ul style="list-style-type: none"> Quiz Midterms Final Exams
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Regression Analysis Introduction to	5
2.	Simple Linear Model	5
3.	Multiple Regression Model	8
4.	ANOVA/Fixed Effect Model	8
5.	Mixed Effect Model and Longitudinal Data Analysis	5
6.	Model Assumptions, Diagnostics, Selection, Multi collinearity	6
7.	Logistical Regression Model	8
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	During semester	10
2.	Homework	During semester	10





No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
3.	Midterm exam	6 th and 7 th weeks	30
4.	E-exam	9 th week	10
5.	Final exam	End of semester	40

*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	Applied Regression Analysis and Other Multivariable Methods
Supportive References	Linear Regression Using R: An Introduction to Data Modeling
Electronic Materials	University website-black board SDL
Other Learning Materials	SPSS Matlab Maple Mathematica

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	- Classroom with capacity of 30-students. - Computer Labs - Good lighting
Technology equipment (projector, smart board, software)	Smart boards Overhead projector Some software like SPSS and Matlab
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students/ internal committee	Direct (Students evaluation electronically organized by Deanship of registration)



Assessment Areas/Issues	Assessor	Assessment Methods
		and admission)/ Verification of students' papers
Effectiveness of Students assessment	Staff members (Peer Reviewer)	Indirect (Frequent meetings consultation among the teaching staffs)
Quality of learning resources	Staff members (course coordinators)	Direct (Meeting between course coordinators and the tutors)
The extent to which CLOs have been achieved		
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

