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

Academic Program and Course Description Guide

2024—2024

the introduction:

It is consideredThe educational program is a coordinated and organized package of academic courses that include procedures and experiences organized into study modules. The primary purpose of these modules is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs, such as the external examiner program.

The academic program description provides a brief summary of the program's main features and courses, indicating the skills that students are expected to acquire, based on the program's objectives. The importance of this description is evident in that it represents the cornerstone for obtaining program accreditation, and is written by teaching staff under the supervision of the academic committees in the academic departments.

This guide, in its second version, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the new developments and changes in the educational system in Iraq, which included a description of the academic program in its traditional form, an annual semester system, in addition to adopting the description of the academic program circulated according to the book of studies T 2906/M3 on 5/3/2023 with regard to programs that rely on the Bologna process as a basis for their work.

Conceptsand terms:

a descriptionThe programAcademic:The academic program description provides a concise overview.According to its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

a descriptionThe decision:Provides a concise summary of the main course features and the learning outcomes expected of the student, demonstrating whether the student has made the most of the learning opportunities available.It is derived fromProgram description.

Program vision:An ambitious vision for the future of the academic program to be advanced, inspiring, motivating, realistic, and applicable.

Program message: It briefly explains the objectives and the activities required to achieve them, and it also identifies the paths and directions of the program's development.

Program objectives: These are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum structure: All courses/subjects included in the academic program according to the approved learning system (semester, year, Bologna track), whether required by (ministry, university, college, or scientific department), along with the number of academic units.

Learning outcomes:A consistent set of knowledge, skills, and values acquired by the student after successfully completing the academic program. The learning outcomes for each course must be defined in a manner that achieves the program's objectives.

Education strategiesand learning: They are the strategies used by a faculty member to develop student teaching and learning, and they are plans followed to achieve learning objectives.Describe all activitiesSafiya And the non-classroomTo achieve learning outcomesFor the program.

modela description The program Academic

AUniversity Name: UniversityDiyala

College/Institute: CollegeManagement and Economics

Scientific Department: DepartmentStatistics

Name of academic or professional program: Bachelor'scount

Final Degree Name: Bachelor's inStatistics

Academic system:Quarterly

Description preparation date: 10/9 /2024

Date of filling out the file: 10/9 /2024

the signature :

Name of the Department Head:

Prof. Sami Abdullah Abdul,

Date: 10/9/2024

the signature :

Name of the Scientific Assistant

Prof. Alia Hussein Khalaf

Date: 10/9/2024

Accurate The file from before :

DepartmentQuality Assurance and University Performance

nameDirector of the Quality Assurance and University Performance Division:M. Younis Kazem Hamid

Date: 17/9/2024

Approval of the Dean

Nizar Maan Abdul Karim

Date: 17/9/2024

.1Program vision

The department works to harmonize education and training to raise the scientific and technical efficiency of its members, taking into account the nature of reality and future aspirations to ensure high quality and academic accreditation to contribute to improving education and learning at various stages of education.

.2Program message

The department is committed to a scientific methodology and institutional work within clear plans to achieve lofty goals in the academic and training fields in accordance with the requirements of quality assurance and academic accreditation, so that its outputs in the subject of statistics become more competitive and ambitious by providing science, knowledge and skills.

.3Program objectives

The department works to provide facilities to ensure continuous improvement of the quality of educational performance at various educational levels to provide distinguished education within a comprehensive framework for achieving academic quality that combines internal and external education.

.4Program accreditation

In the stages of obtaining academic accreditation .

.5Other external indicators

noexternal influences.

DoThere is a sponsor for the program according to the standards of the Association of Arab Universities..

.6 Structure The program				
Commence	Percentage	Study unit	numberCourses	structureThe program
	144.01%	16	8	requirements The institution
	8.8%	9	5	requirements Quantity
	77.19%	118	44	requirements foot
He is trainingStudent (30) inOne of the official government departments				Training Summer
				Other

* Notes may include whether the course is core or elective..

.7Program description				
watches Accredited		nameCourse	code The decision or The course	Year/Level
practical	Theoretical			
2	4	principles Statistics1		year First
	3	Differentiation		
	1	computer		
	2	the languageArabic		
	2	Democracyand human rights		
	4	principles Statistics2		
	3	Integration		
	2	principlesaccounting		
	2	principlesManagement		
	2	principles Economy		
	2	English language		
	3	Methods Preview		The second stage
	3	principles Probabilities		
	3	Sequencesand series		
	3	Matrices		
	2	StatisticsEconomic 1		
	2	Quality control 1		

2	1	MATLAB1		
	2	the language English		
	2	dragBaath Party imams		
2	1	Calculators		
	3	Probability distributions		
	3	Surveys Statistics		
	3	algebralinear		
	3	EquationsDifferential		
	2	Statistics The economist 2		
	2	controlQuality2		
2	1	MATLAB 2		
	2	Arabic		
	3	countathlete1		year Third
	3	analysis decline1		
1	2	Programming sin		
1	2	Analysis Numerical1		
	2	countd e m o g r a p h i c 1		
	2	vital procedure1		
2	1	SPSS1		
	3	Mathematical statistics 2		
	3	analysisdecline 2		
1	2	Operations Research		
1	2	DownloadNumerical2		
1	2	Eraad e m o g r a p h i c 2		
	2	vital procedure2		
2	1	SPSS 2		
	3	inference1		Fourth year
	3	DesignAnd analysis of experiences1		
	3	Measurement The economist1		
1	2	analysis chains Temporal1		
2	1	Applications and analysis Statistics 2		
	3	Multivariate Analysis 2		
	2	From him Searching		
	3	inference 2		
	3	Design and Analysisexperiments2		

	3	Measurement The economist2		
1	2	analysis chains Temporal 2		
2	1	Applications and analysis Statistics2		
	2	analysisMultipleVariables 2		
	1	projectGraduation research		

.8 Outputs learning Expected program	
Knowledge	
Learning Outcomes Statement 1 - Use And application**Statistical concepts in case studies**	Learning outcomes 1 - Familiarity with the principles and concepts of statistics
Skills	
Learning Outcomes Statement2 - collection and analysis Data around Topics Statistics .	Learning outcomes 2 -**Ability to understand statistical methods and how to apply them.**
Learning Outcomes Statement3 - to choose Roads Statistics in dealing with realistic problems .	Learning outcomes3 -**Making comparisons and statistical differences for various topics** .
Values	
Learning Outcomes Statement4 - ability To understand and distinguish between statistical analyses	Learning outcomes4 Preparing concepts for various topics
Learning Outcomes Statement5 -**The ability to examine and evaluate realistic and presented topics**	Learning outcomes 5 -**The ability to understand and analyze the problems of the topics presented and choose the best method between them.**

.9Teaching and learning strategies

-1 Explaining the scientific material to students in detail

-2Student participation in solving mathematical and statistical problems

.-3Discussion and dialogue about the curriculum content.

-4Using statistical programs to process many topics.

-5 Brainstorming method.

.10Evaluation methods

-1 Topical questions : It includes the

next :-

Questionsmultiple choice

True or false questions

- **Questions The interview**

-2**Self-assessment and peer assessment**

-3Daily tests and

assignments

4Various tests:

- I disappeared Constructive achievement accompanying

the teaching plans.

-Final achievement tests include::

-1Monthly final exams at the end of each academic

.11 The Authority The teacher						
MembersFaculty						
numbersFaculty		**Requirements.Special skills (if any)**		**Specialization**		**Academic rank**
Lecturer	**angel**			**private**	**general**	
Nothing	**nothing**					**Mr.**
	9				**general**	**Mr.assistant**
	3				**general**	**teacher**
	5				**general**	**teacherassistant**

developmentProfessional
directing Members body teaching New ones

Briefly classifies the scientific methods used to orient new, visiting, full-time, and part-time faculty members at the institutional and departmental levels..

-This is done through holding periodic meetings and meetings..

Professional development for faculty members

Briefly describes the plan and arrangements for academic and professional development of faculty members such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

(2.1) Acceptance criteria

(Establishing regulations related to admission to the college or institute, whether central admissionAAnd another mention)

Determine a special admission rate for all graduates of preparatory studies, both scientific and literary branches.

(3.1) The most important sources of information about the program

to rememberIn brief.

Corresponding departments in prestigious colleges

.14Program Development Plan

-Shift to the Bologna Process

a planMaha Art Program															
Required learning outcomes of the program															
values				Skills				knowledge				essentialOr my choice	name The decision	code The decision	The year / Level
4c	3C	2C	1c	4b	3b	2b	1b	4A	3A	2A	1A				
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	principles Statistics1		The first
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	principles Statistics2		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	principlesPossibilities1		Second
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	principlesPossibilities2		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	count athlete1		Third
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	count athlete2		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	inference1		Fourth
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	inference2		

- Please tick the boxes corresponding to the individual learning outcomes of the programme being assessed.

Curricula

Statistics Department

The second stage

First course

2024-2024

Course Description Form

1. Course name
computer
2. codeThe decision
3. the chapter /year
First semester/second stage/2024-2024
4. Date preparedDescription
10/9/2024
5. AAvailable attendance forms
My presence
6. Number of study hours (total) / Number of units (total)
45/3
7. Course Instructor Name(If more than one name is mentioned)
Name: A.M. Laith Talib Rashid Email: laith88@uodiyala.edu.iq
8. Course objectives

Course objectives **1- Preparing the student to learn about the computer world to keep pace with scientific developments in this field** **2- stitchesGood morals in dealing with the worldelectronYAnd at the same time how to maintain privacy** **3- Student information onThe most important and popular application programs at the present time.** **4- Learn how to work and implement application programs.**	**Course objective**
9.	
Course outcomes, teaching, learning and assessment methods **1- Cognitive objectives:- Making the student able to** **2- - To know the most important principles and basic concepts in computers.** **3- - To identify the types of functions and relationships on functions incomputer** **4- To learn about Microsoft applicationsTOffice** **5- To know how to use each application** **6- That each application be applied in any field in the educational stages** **Course skill objectives** **1. The ability to understand mathematical and engineering problems and convert them into a mathematical formula in**	**Strategy**

Excel.

2. **The ability to build an integrated program that works logically and smoothly.**
3. **The ability to detect and correct linguistic and programming errors in a programming text, making the text more fluid.**

Teaching and learning methods

1. **Managing the lecture in a practical manner related to daily life to attract the student to the subject of the lesson without straying from the core of the topic, so that the material is flexible and amenable to understanding and analysis.**
2. **Discussion and dialogue**
3. **Enrichment questions**
4. **direct interrogation**

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results using computer applications)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

1. **Preparing class and homework assignments**
2. **Preparing reports on practical experiments**
3. **Conducting daily and semester exams.**
4. **Conducting final exams**

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about computer concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply computer concepts in various fields.

3- Developing the student's ability to deal with the Internet..

10. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Daily exam,	Two-hour	basics application	View the	3	the first

semester exam and practical report	theoretical lectures and two-hour laboratory	system excel	interfaceexcel		
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	basics application system excel	Introducing the student to the tabfile	3	the second
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	basics application system excel	identification The student Home tab	3	the third
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	basics application system excel	identification The student Tabbed planning	3	Fourth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	I want Formulas Sports	Student definition of the functionsum Student definition of formulaif conditional	3	Fifth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	construction Formulas Sports	Student definition of the functioncount andcountA	3	Sixth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	construction Formulas Sports	Student definitionSwitchboard average Student definitionSwitchboardmin-max	3	Seventh
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	Introduction to Computer Networks + Network Classifications, Benefits, and Risks	3	The eighth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	The Internet (its concept + its history + its features + its requirements)	3	Ninth
Daily exam, semester exam and	Two-hour theoretical lectures and	Lecture delivered in person and presented onData Show + Computer Lab	Communication technologiesAInternet	3	tenth

practical report	two-hour laboratory				
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	Explanation of the topic (Internet Service Providers + Websites + Internet Browsers)	3	Eleventh
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	Introduction to the operating systemWindows 10 (Operation steps + desktop components + icons)	3	Twelfth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	)Continuation of the lecture(Previous + Taskbar+Start menuStart	3	thirteenth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	Types of computer operating systems	3	fourteenth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Lecture delivered in person and presented onData Show + Computer Lab	Types of computer browsers and methods of searching the Internet	3	Fifteenth

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written, practical exams, labs, reports, etc.

1- **60 marks divided into a final written exam of 50 marks and a final practical exam of 10 marks.**

1. **40 degrees of special endeavor divided into:**
   - أ) **5 attendance marks.**
   - ب) **10 marks homework with lab work.**
   - ت) **15 marks written exam.**
   - ث) **10 marks practical exam.**

12. Learning and teaching resources

Ministry of Higher Education Curriculum Book Part3And the part4(Stage 1)second)	Required textbooks (methodology if any)
Ministry of Higher Education Curriculum Book Part3And the part4(Stage 1)second)	Main references (sources)
Office 2010 Dr. Ziad Mohamme Abboud, 2013	Recommended supporting books and references (scientific journals, reports, etc.)

Windows 7 operating system, Microsoft CorporationMicrosof USA, the company's official websitewww.microsoft.com	**Electronic references, websites**

Course Description Form

13. Course name	
MATLAB 1	
14. codeThe decision	
15. the chapter /year	
First semester/second stage/2024-2024	
16. Date preparedDescription	
10/9/2024	
17.AAvailable attendance forms	
My presence	
18.Number of study hours (total) / Number of units (total)	
45/3	
19. Course Instructor Name(If more than one name is mentioned)	
Name: M.M. Arshad Hamid Hassan: arshadhameed@uodiyala.edu.iq	
20. Course objectives	
Course objectives • **Introducing the student to the most important foundations, principles and uses of the applicationMATLABIn programming** • **Explaining the concept of sets and function diagrams in the programming languageMATLAB** • **Highlighting the importance ofMATLABIn knowing the form of the function in programming** • **This course aims to study programming in the languageMATLABAnd the student can write a program in the languageMATLABTo find the solution to statistical and mathematical equations**	**Course objective**
21.	
Course outcomes, teaching, learning and assessment methods **7- Cognitive objectives:- Making the student able to** **8- - To know the most important principles and basic concepts inMATLAB** **9- - To identify the types of functions and relationships on**	**Strategy**

functions inMATLAB

10- To learn about Microsoft applicationsTOffice

11- To know how to use each application

12- That each application be applied in any field in the educational stages

Course skill objectives

4. **The ability to understand mathematical and engineering problems and transform them into programmable equations.**
5. **The ability to build an integrated program that works logically and smoothly.**
6. **The ability to detect and correct linguistic and programming errors in a programming text, making the text more fluid.**

Teaching and learning methods

5. **Managing the lecture in a practical manner related to daily life to attract the student to the subject of the lesson without straying from the core of the topic, so that the material is flexible and amenable to understanding and analysis.**
6. **Discussion and dialogue**
7. **Enrichment questions**
8. **direct interrogation**

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results using computer applications)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

1. **Preparing class and homework assignments**
2. **Preparing reports on practical experiments**
3. **Conducting daily and semester exams.**
4. **Conducting final exams**

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about computer

concepts and how to use them in the fields of statistics. 2- Training and personal development skills on how to apply computer concepts in various fields. 3- Developing the student's ability to deal with the Internet..	

22. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Identify hard and soft components and classify programming languages.	Introduction to computer parts	3	the first
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Learn about the components of the interface and the role of each part.	Get to know the interfaceQBasic	3	the secon
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study the entry commands and the conditions for using each command.	Few data entry methods	3	the third
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study the entry commands and the conditions for using each command.	There are many ways to enter data.	3	Fourth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Learn how to format results and control decimal places.	Results printing format	3	Fifth
Daily exam, semester exam and practical	Two-hour theoretical lectures and two-hour	Study of how to repeat the execution of a part of a program a specified number of	Iterative loops	3	Sixth

report	laboratory	times.			
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study of the implementation of a software task linked to the fulfillment of a specific condition	Simple conditional statements	3	Seventh
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study of the implementation of a software task coupled with the fulfillment of a set of conditions	compound conditional sentences	3	The eight
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Place conditional statements inside loops to perform more complex programming tasks.	Combining conditional statements with loops	3	Ninth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Learn how to call built-in functions in the language, such as trigonometric, logarithmic, and approximation functions.	Ready-made office functions	3	tenth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study how to program one-dimensional arrays	One-dimensional arrays	3	eleventh
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study how to program two-dimensional arrays	two-dimensional arrays	3	twelfth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Drawing simple geometric shapes and mathematical functions	Simplified drawing byQBasic	3	thirteent
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Learn to program text variables such as names and characters.	Handling text data	3	fourteent
Daily exam,	Two-hour	Learn how to create	Programmer-defined	3	fifteenth

semester exam and practical report	theoretical lectures and two-hour laboratory	new functions and program subroutines.	functions and subroutines		

23. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written, practical exams, labs, reports, etc.

2- 60 marks divided into a final written exam of 50 marks and a final practical exam of 10 marks.

2. 40 degrees of special endeavor divided into:

ج) 5 attendance marks.
ح) 10 marks homework with lab work.
خ) 15 marks written exam.
د) 10 marks practical exam.

24. Learning and teaching resources

bookMATLAB For students of the faculties of management and economics	Required textbooks (methodology if any)
Lectures prepared by the instructor "MATLAB for Engineers", Holly Moore, Pearson Publishing, 2009.	Main references (sources)
	Recommended supporting books and references (scientific journals, reports, etc.)
	Electronic references, websites

model a description The decision

25. Course name
Sequences and series
26. codeThe decision
27. the chapter /year
First semester/second stage/2024-2024
28. Date preparedDescription
10/9/2024
29.AAvailable attendance forms
My presence
30.Number of study hours (total) / Number of units (total)
3/3
31. Course Instructor Name(If more than one name is mentioned)
Name: M.M. Nour Karim Asi Email:norkreemmang @uodiyala.edu.iq
32. Course objectives

Course objectives	Course objectives
• Introducing the student to the concept of purpose using€. • The student will learn the concept of continuity using$^{\delta}$and€. • Explaining the relationship between derivative and continuity. • This course aims to study derivatives and objectives.. • Introducing the student to L'Hopital's rule of ends. • The student should be able to apply Rolle's theory.. • The student will be able to apply the mean value theorem. • Introducing the student to sequences and series and diagnosing convergence in numerical and geometric sequences and series. • Teaching the student some common tests of convergence of numerical and geometric series.	

33.	
Course outcomes, teaching, learning and assessment methods **Cognitive objectives:** **1-Define and understand continuity and its relationship to the derivative.** **2-Defining the concept of goals and applying some theories to them.** **3-Introducing the student to sequences and series.** **4- Mastering the use of common convergence tests.** **- Course skill objectives:** **1) Interactive skills: The ability to communicate with the subject teacher and colleagues.** **2) Diagnostic skills: the ability to diagnose functions and their real-world applications.** **3) Scientific reports.** **Teaching and learning methods:** **1) 1Brainstorming method.** **2) Use decision making to test the best alternative.** **3) Presentation .** **Evaluation methods:** **1) Various tests (daily, monthly, semester, final).** **2) Oral tests.** **3) Duties.** **Affective and value-based goals:** **1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions for it on the basis of Expected results).** **2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them).** **3-Creative thinking: (the ability to produce new ideas and methods of solution).** **Teaching and learning methods for the affective side:** **1) Brainstorming method.** **2) Use decision making to test the best alternative.** **3) Presentation.** **Methods for assessing affective goals:** **1) Clarification questions.** **2) True or false questions.** **3) Duties.**	**Strategy**

4) Self-assessment.

General and transferable skills:

1-- Skills in collecting and analyzing information about mathematical concepts and how to use them in various fields. Statistics.

2- Training and personal development skills on how to apply the concept of sequences in the fields of Statistics.

3- Developing the student's ability to deal with the Internet.

34. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral and written examination	My presence	Limit and continuity	Definition of purpose, definition of continuity.	3	the first
Discussion, oral and written examination	My presence	Applications	Applications of purpose and continuity.	3	the secon
Discussion, oral and written examination	My presence	Definite derivative	Definition of derivative.	3	the third
Discussion, oral and written examination	My presence	The relationship between derivative and continuity	The relationship between the derivative and continuity.	3	Fourth
Discussion, oral and written examination	My presence	Lhopital's rule	Definition of the concept of L'Hôpital's principle.	3	Fifth
Discussion, oral and written examination	My presence	Rolle's Theory	Understand the concept of Rawls theory.	3	Sixth
Discussion, oral and written examination	My presence	Mean Value Theorem	Understand the concept of the mean value theorem.	3	Seventh
Discussion, oral and written examination	My presence	Approximation	Approximation using the mean value theorem.	3	The eight
Discussion, oral and written examination	My presence	Approximate Root	Finding the approximate root of a number using the mean value theorem	3	Ninth

Discussion, oral and written examination	My presence	Convergence and divergence	Understand the concept of sequences, convergence and divergence of sequences	3	tenth
Discussion, oral and written examination	My presence	Series	Understanding the concept of series (numerical and geometric)	3	eleventh
Discussion, oral and written examination	My presence	Type of Series	Learn about some common types of sequences.	3	twelfth
Discussion, oral and written examination	My presence	Series Convergence	Convergence tests for series	3	thirteenth
Discussion, oral and written examination	My presence	Radius of Convergence	Finding the radius of convergence of a power series	3	fourteenth
Discussion, oral and written examination	My presence	Exam	First semester exam	3	fifteenth

35.

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

4- 60 marks written final exam.

3. 40 degrees of special endeavor divided into:

ذ) 5 attendance marks.

ر) 5 marks homework with.

ز) 15 marks first written exam

س) 15 marks for the second written exam

36. Learning and teaching resources

Zafer Rashid, 1990, "Principles of Mathematics for Management Students," Dar Al-Hikma Press.	**Required textbooks (methodology if any)**
RKNagle,EBSatt and ADSnider:Fundementals of differential equation&Boundary Value Problems.Addition Wesley,Longman,2000	**Main references (sources)**
H.Anton: Calculus with Analytic Geometry, 5th ed, John Wiely & Sons, New York, 1995.	**Recommended supporting books and references (scientific journals, reports…)**
nothing	**Electronic references, websites**

Course Description Form

1. Course name
Matrices
2. Course code
3. Semester/Year
Second stage/first semester 2024-2024
4. Date of preparation of this description
10/9/2024
5. Available forms of attendance
My presence
6. Number of study hours (total) Number of units (total)
3/3
7. Name of the course administrator (if more than one name is mentioned)
Name: M.M. Amal Hadi Rashid Email: amal@uodiyala.edu.iq
8. Course objectives
Course objectives
1- Educational benefit, by getting to know the conceptMatrices And the concepts associated with it. **2- Ways toStatisticsMathematical Calculus** **3- Learn about the importance and types of applicationsstatisticalFor sports roads** **4- Study of mathematical methods that reduce costs and maximize profits.**
9. Teaching and learning strategies

1-Introduce the student to the scientific concept ofMatrices And on the roads ofStatisticsMathematical concepts of matrices, differentiation and integration, and the main functions that operate with this concept and the impact of this on its success and	**Strategy**

progress.StatisticsIn light of contemporary challenges and changes, it must achieve efficiency and effectiveness. 2- Expanding the student's scientific horizons by linking different cognitive information and then applying it in his advanced research studies. b-Subject-specific skills 1-Applications of differential and integral calculus in real lifeMy statistics 2- Identify the approaches that politics can use.StatisticsFollow it in achieving development. 3The effectiveness of mathematicsand matricesIn directing investments and achieving growth in economic sectors 4- Know the waysModernIn mathematicsand matricesIn order to employ them for policy experiments and ways to develop them.	

10. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Home work + daily exam	Giving focused lectures with practical examples	Basic concepts and use of mathematics in economic analysis	Knowing the basic concepts of mathematics	3	3
Home work	Giving focused lectures with	Matrices and Determinants Matrix Algebra and Its Types	Knowledge of matrices and	3	3

	practical example		determinants		
Homework + Daily Exam	Mathematical examples	matrix switch Algebraic operations on matrices (addition, subtraction, and multiplication)	Solve various questions	3	3
Homework	Mathematical examples	Matrix Quantum Multiplication Rules conjugate matrix inverse matrix	Calculating the inverse of a matrix	3	3
Homework	Mathematical examples	Determinants, their types and methods of finding them Properties of determinants Chaos method Kramer's method	Knowing how to find determinants	3	3
Homework	Mathematical examples	Using the matrix in Solving mathematical models An economic model for determining equilibrium prices constant linear quadratic cubic exponential function	Knowledge of bases and functions	3	3
Homework	Mathematical examples	Ace and functions	Various exercises	3	3

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily, oral, and monthly preparation, written exams, reports, etc..
1)60Grade for the final written exam,
40 (2 points related to striving, divided into:
a) 5 attendance marks.
d) 15 marks for the written examAt a rate of two exams per month.
d) 5 marks for the oral exam

12. Learning and teaching resources

1Mathematics for Economists / Dr. Adnan Shamkhi 2- Sports Economics / Dr. Hussein Bakhit 3- Mathematics for Administrators / Dr. Dhafer Rashid 4-Information networkElectronic	Required textbooks (methodology if available)
	Main references (sources)
All sources are good.	Recommended supporting books and references (scientific journals, reportsR....)
Video lectures on YouTube	Electronic referencesAndInternet sites

Course Description Form

37. Course name
Economic Statistics 1
38. codeThe decision
39. the chapter /year
First semester/second stage/2024-2024
40. Date preparedDescription
10/9/2024
41.AAvailable attendance forms
My presence
42.Number of study hours (total) / Number of units (total)
3/3
43. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Dr. Yasser Ghanem Yahya Ema   **dr.yasser94@uodiyala.edu.iq**
44. Course objectives

Course objectives • **Introducing the student to the most important foundations and principles of economic statistics** • **Explaining the concept of economic statistics** • **Highlighting the importance of economic statistics in practice** • **This course aims to study the methods of economic statistics.** **The student should be able to classify, collect and descri data.**	**Course objectives**
45.	
Course outcomes, teaching, learning and assessment methods **13- Cognitive objectives:- Making the student able to** **14- - To know the most important principles and basic concepts in economic statistics.** **15- To determine the methods of economic statistics.**	**Strategy**

16- To understand the concept of economic statistics methods

17- To express his opinion on the concepts of economic statistics

18- To apply survey concepts with real-life examples and case studies.

Course skill objectives

1- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

2- - Diagnostic skills: the ability to diagnose problems and solve them.

3- Scientific reports.

ATeaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

4- Self-assessment

5- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about economic measurement concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply appreciation concepts in different fields.

3- Developing the student's ability to deal with the Internet..

46. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	Definition and objectives of economic statistics and labor statistics	Definitions and concepts	3	the first
Discussion, or and written examination	My presence	Statistics on output, prices and indices	Understanding output and price statistics	3	the secon
Discussion, or and written examination	My presence		Absorption	3	the third
Discussion, or and written examination	My presence	Statistics on output, prices, and indices	output and price statistics	3	Fourth
Discussion, or and written examination	My presence		Absorption	3	Fifth
Discussion, or and written examination	My presence	Labor force, working time, and labor productivity statistics	Labor force and working time statistics	3	Sixth
Discussion, or and written	My presence	Definition and objectives of	Definitions and concepts	3	Seventh

examination		agricultural statistics			
Discussion, or and written examination	My presence	Agricultural censuses and agricultural land statistics	Understanding the foundations of agricultural statistics	3	The eight
Discussion, or and written examination	My presence	Statistical measures of the use of cultivated land and statistical measures of the change in yield per dunum	Presentation and analysis	3	Ninth
Discussion, or and written examination	My presence	Agricultural production statistics and statistics applications	Applications and exercises	3	tenth
Discussion, or and written examination	My presence		Other agricultural	3	eleventh
Discussion, or and written examination	My presence	First month test of the first semester	-	3	twelfth
Discussion, or and written examination	My presence	Agricultural sector indices and statistics	Presentation and analysis	3	thirteenth
Discussion, or and written examination	My presence		agricultural	3	fourteent
Discussion, or and written examination	My presence	First semester exam		3	fifteenth

47. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

5- 60 marks written final exam.

4. 40 degrees of special endeavor divided into:

ش) 5 attendance marks.

ص) 5-10 marks homework with.

ض) 15 marks written exam.

ط) 5 marks oral exam.

48. Learning and teaching resources	
bookPrinciples of Statistics Dr. Dhafer Hussein Rashid	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

49. Course name	
Principles of Probability	
50. codeThe decision	
51. the chapter /year	
First semester / second stage / 2024 – 2024	
52. Date preparedDescription	
10/9/2024	
53.AAvailable attendance forms	
My presence	
54.Number of study hours (total) / Number of units (total)	
3/3	
55. Course Instructor Name(If more than one name is mentioned)	
Name: Assistant Professor Omar Adel Abdel-Wahab **omersta@uodiyala.edu.iq**	
56. Course objectives	
Course objectives **1- Student definitionWith principlespossibilityno** **2- Providing the student with different topics ab B.forPerform the possibilities** **3- Explain the importance of BAMforPerform the possibilities**	**Course objectives**
57.	
1. Required program outcomes, teaching, learning and assessment methods **A- Cognitive objectives** **A1- The student should know the most important principles and basic concepts.toMforPerform the possibilities.** **A2- The student should explain the statistical concepts in B.M.forPerform the possibilities** **A3- The student should apply the concepts of probability principles in theoretical and practical reality**	**Strategy**

A4- To be creative in using modern and contemporary concepts in the principles of probability.
A5- To express an opinion or issue a judgment on statistical concepts in the principles of probability.
B - Program skill objectives
B1 - Communication skills: - Possessing a high level of skills in information technology, working with others (love of teamwork)
B2 - Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in the principles of probability.

Teaching and learning methods
1- Lecture method
2- Discussion and dialogue method
3- Direct questions
4- direct interrogation

Evaluation methods

1- Objective questions Objective Test items are divided into:
A- True or false questions True/False Items
B - Multiple choice questions Multiple Choice Items
C- Interview questions Matching Items
2- homework Homework assignments
3- Self-assessment and peer assessment Peer and Self-Assessment
4- Tests are divided into:
A- Formative achievement tests accompanying teaching plans
B - Various final achievement tests:
1- Monthly final exams at the end of each academic month
2- Final exams at the end of the semestertheseasontheStudy
C- Emotional and value goals.
A1- Establishing the principle of cooperation
A2-Working as a team

Teaching and learning methods
1- Using brainstorming Brain Storming.
2- Use of various mind maps.
3- Use problem solving method.
4- Using the presentation method Presentation

Evaluation methods
5- Objective questions Objective Test items are divided into:

for- True or false questions True/False Items B - Multiple choice questions Multiple Choice Items C- Interview questions Matching Items 6- homework Homework assignments 7- Self-assessment and peer assessment Peer and Self-Assessment 8- Tests are divided into: for- Formative achievement tests accompanying teaching plans B - Various final achievement tests: 3- Monthly final exams at the end of each academic month 4- Final exams at the end of each semester 3- Final exams at the end of the academic year. D - General and transferable skills (other skills related to employability and personal development). D1- Communication skills: - Possessing a high level of skills in information technology, working with others (love of teamwork) D2- Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in probability distributions. Teaching and learning methods 1- Using brainstorming Brain Storming. 2- Use of various mind maps. 3- Use problem solving method. 4- Using the presentation method Presentation Evaluation methods 1- Use of tests Various achievement exams (daily, monthly,endlobeto) 2- Use of oral examination methodOrally Tests 3- Using the homework method Homework Assignments	

58. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	Set and subset basics	Introducing t student to the basics of grou How to form	3	the first
Discussion, or and written examination	My presence	Operations on sets ar relations on sets	How to perform operations Sports on groups as well as the relationships that bi the groups	3	the secon
Discussion, or	My presence	Combinations	Explanation of the	3	the third

and written examination			principle of compatibility in Remove items from groups		
Discussion, or and written examination	My presence	permutations	Explanation of the principlepermutatio In pulling items fror groups	3	Fourth
Discussion, or and written examination	My presence	General exercises solution	Involving students i solving t Marine	3	Fifth
Discussion, or and written examination	My presence	General principles of probability	Introducing the student to the basics probability and how calculate it	3	Sixth
Discussion, or and written examination	My presence	Randomized trials	Explain what experiments are Randomness and ho to do it	3	Seventh
Discussion, or and written examination	My presence	General exercises solution	Involving students i solving exercises	3	The eight
Discussion, or and written examination	My presence	First monthly test of the semester the first	—	3	Ninth
Discussion, or and written examination	My presence	Events and sample space	Teaching students how to create events in collections	3	tenth
Discussion, or and written examination	My presence	Randomized trials ar probabilities	Understanding and knowledge	3	eleventh
Discussion, or and written examination	My presence	The first law of probability	Understanding and knowledge	3	twelfth
Discussion, or and written examination	My presence	Probability and independence of ever	Introducing the student to the event His account mechanism	3	thirteenth
Discussion, or and written examination	My presence	Conditional probabil and law Biz	Introducing the student to the accou conditional probabil of a variable	3	fourteent
Discussion, or and written examination	My presence	Second monthly test the second semester		3	fifteenth

59. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

6- 60 marks written final exam. **5. 40 degrees of special endeavor divided into:** **ظ) 10 attendance marks.** **ع) 5 marks homework with.** **غ) 15 marks written exam.** **ف) 10 marks oral exam.**

60. Learning and teaching resources

bookPossibilities **Composition** **Assistant Professor Aleem Ismail Al–Gharabi** **Dr. Dhafer Hussein Rashid** **Teacher Ali Abdul Hussein Al–Wakeel**	**Required textbooks (methodology if any)**
H. Pishro-Nik, "Introduction to probability, statistics, and random processes", 2014	**Main references (sources)**
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

61. Course name	
Inspection methods	
62. codeThe decision	
63. the chapter /year	
First semester/second stage/2024-2024	
64. Date preparedDescription	
10/9/2024	
65.AAvailable attendance forms	
My presence	
66.Number of study hours (total) / Number of units (total)	
3/3	
67. Course Instructor Name(If more than one name is mentioned)	
Name: M. Hesham Faroun Abdel Latif Email: hisham@uodiyala.edu.iq	
68. Course objectives	
Course objectives **This course aims to identify the sampling methods and techniques through which data are collected, allowing for logical and acceptable analysis and interpretation, enabling accurate conclusions about the study. It also introduces the methods used to determine the sample size drawn from the phenomenon under study, as well as how to estimate the mean, total, and variance for the population for all sampling methods.**	**Course objectives**

69.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:** **1- What is meant?D Sample and its features The basic steps for designSample** **2- Inspection methods** **3- Sample size estimation** **4- Ratio estimates for all sampling methods** **Course skill objectives** **6- EmpowermentFrom conducting and designing samples to all inspection methods** **7- Enable estimation of sample sizes** **8- Empowerment of appreciation** **Teaching and learning methods** **1- The lecture.** **2- Discussion and dialogue** **3- Enrichment questions** **4- direct interrogation** **Evaluation methods** **1-Clarification questions** **2- True or false questions** **3- Duties** **9- Self-assessment** **10- Tests (daily, monthly, semester, final)).** **Emotional and value goals** **1- The ability to examine and evaluate the topics raised.** **2- The ability to criticize, distinguish and choose between the topics presented.** **3- The ability to produce new ideas** **Teaching and learning methods** **1- Brainstorming method** **2- Use decision making to test the best alternative.** **3- Presentation.** **Evaluation methods** **- Various tests (daily, monthly, semester, final)** **2-Oral tests** **3- Duties** **General and transferable skills (other skills related to employability and personal development).**	**Strategy**

1- SkillsDistinguish between types of inspection **2- SkillsTraining on sampling procedure** **3-SkillsDetermine sample size based on sampling type**	

70. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, ora and written examination	My presen		How to choose a simple random sampl	3	the first
Discussion, ora and written examination	My presen		Estimating the variance of the mean and total of the population	3	the secon
Discussion, ora and written examination	My presen		Confidence limits for the population mean and variance	3	the third
Discussion, ora and written examination	My presen		Ratio estimation	3	Fourth
Discussion, ora and written examination	My presen		Choosing a sample size to estimate the mean and variance of the population	3	Fifth
Discussion, ora and written examination	My presen		What is a stratified examination?	3	Sixth
Discussion, ora and written examination	My presen		Average and total population estimate of stratification	3	Seventh
Discussion, ora and written examination	My presen		First month exam	3	The eight
Discussion, ora and written examination	My presen		How to choose a systematic sample, estimate the mean and total of the population	3	Ninth
Discussion, ora and written examination	My presen		Estimating variance for the population mean and total, estimating sample size	3	tenth
Discussion, ora	My presen		Ratio estimationR for	3	eleventh

and written examination			simple random sampl		
Discussion, ora and written examination	My presen		Estimating the mean and total using proportions in a stratified sample	3	twelfth
Discussion, o and writt examination	My presen		One-stage cluster random sampling	3	thirteenth
Discussion, o and writt examination	My presen		Estimating the arithmetic mean and the sum Estimating the variance of the arithmetic mean	3	fourteent
Discussion, o and writt examination	My presen		Second month exam	3	fifteenth

71.

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

7- 60 marks written final exam.

6. 40 degrees of special endeavor divided into:

ق) 5 attendance marks.

ك) 5 marks homework with.

ل) 15 marks first written exam

م) 15 marks for the second written exam

72. Learning and teaching resources

nothing	**Required textbooks (methodology if any)**
1- Abu Ammah, Abdul Rahman Muhammad, Al-Husayni, Abdul-Barr Radhi, Hindi, Mahmoud Muhammad Ibrahim (1995), Mars Publishing House, Riyadh, Kingdom of Saudi Arabia **2- Thompson, S. K (2002)**	**Main references (sources)**

sampling, 2nd Wiley, New York. 3-Benedetto,jjandFerreira.pJ(2001). Modern sampling theory, Birkhauser 4- Sampath, S. (2000). Sampling theory and methods, cRc press	
nothing	**Recommended supporting books and references (scientific journals, reports…)**
nothing	**Electronic references, websites**

Course Description Form

73. Course name
Quality Control 1
74. codeThe decision
Quarterly
75. the chapter /year
First semester/second stage/2024-2024
76. Date preparedDescription
10/9/2024
77.AAvailable attendance forms
My presence
78.Number of study hours (total) / Number of units (total)
2/2
79. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Prof. Dr. Enaam Abdul Rahman Noman Ema inaamsta@uodiyala.edu.iq
80. Course objectives

Course objectives

- **Introducing the student to the theoretical foundations of the subject as well as its practical application.**
- **Khaha**
- **Features that must be available in order to get the bestQuality control modelSimulates practical realityFor studies**
- **studied**
- **building skillsQuality controlHow to get an analysis of the phenomenon studied through**
- **Knowing the factor affecting it.**

81.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:** **19- Understanding the basicsQuality control** **20- to understandStatistical control of quality** **21- to understandBasics of using the quality control model**	**Strategy**

22- to understandUses of quality control
23- Understanding the stages of the quality control process
24- Understanding the disadvantages of using quality control panels
25- to understandQuality control maps
26- to understandArithmetic mean panel
27- to understandRange plate

Course skill objectives

11- Interactive skills: the ability to communicate with the subject teacher and colleagues.
12- Diagnostic skills: the ability to deal with the statistical problem.
13- Analytical skills: The ability to analyze and distinguish between different types of analytical commands in the program.

Teaching and learning methods

1-Presenting basic theories, meaning that learning will begin with presenting basic theories and concepts.For quality control
2- Analysis paintingsAnd representedIn the process of building a panel, by buildingThe board for the phenomenon under study.
3- Use of studiesEconomicPractical applications and experiments in various fields, such as:
4- Agricultural sciences and medical sciences, for the purpose of explaining how to useControl panelIn practical life.
5- Providing individual guidance to students to understand theories and practical exercises, and guiding them in solving problems and understanding results.
6- Organizing group discussions aboutProper panel building processes, which contributes to the exchange of ideas and mutual learning among students.
7- Previous studies can be used as examples to analyze and understand the results and statistical analyses used in
For the arithmetic mean board
8- Providing continuous assessment of students' performance and providing feedback to guide them and improve their understanding and skills in analysis.
control panels

Evaluation methods

1-Clarification questions
2- True or false questions
3- Duties
14- Self-assessment
15- Tests (daily, monthly, semester, final)).

Emotional and value goals

4- The ability to examine and evaluate the topics raised.
5- The ability to criticize, distinguish and choose between the topics presented.
6- The ability to produce new ideas

Teaching and learning methods

1- Brainstorming method
2- Use decision making to test the best alternative.
3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)
2-Oral tests
3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about the concepts of designing and analyzing experiments and how to use them in agricultural fields.
2- Training and personal development skills on how to apply experimental design concepts in various fields.
3- Developing the student's ability to build a correct experiment.

82. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence		Basic conceptsThe emergence and development of quality control	3	the first
Discussion, or and written examination	My presence		Control panel conceptTypes of quality control panels	3	the secon
Discussion, or and written examination	My presence		Statistical methodsStatistical methods used in control	3	the third
Discussion, or and written examination	My presence		The importance of control	3	Fourth
Discussion, or and written examination	My presence		Quality control and its types	3	Fifth
Discussion, or and written examination	My presence		Types of variables used	3	Sixth
Discussion, or and written	My presence		Quantitative variables	3	Seventh

examination					
Discussion, or and written examination	My presence		Quantitative statistical methods	3	The eight
Discussion, or and written examination	My presence		Arithmetic mean panel	3	Ninth
Discussion, or and written examination	My presence		Range plate	3	tenth
Discussion, or and written examination	My presence		Range panel based on standard deviation	3	eleventh
Discussion, or and written examination	My presence		Advantages of the range board	3	twelfth
Discussion, or and written examination	My presence		Standard Deviation Panel	3	thirteentl
Discussion, or and written examination	My presence		Deflection plate based on range	3	fourteent
Discussion, or and written examination	My presence		Monthly exam	3	fifteenth

83. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

8- 60 marks written final exam.

7. 40 degrees of special endeavor divided into:

ن) 5 attendance marks.

ه) 5 marks homework with.

و) 15 marks first written exam

ي) 15 marks for the second written exam

84. Learning and teaching resources

Statistical control of quality Prof. Nazia Al-Mashhadani	**Required textbooks (methodology if any)**
	Main references (sources)
	Recommended supporting books and

	references (scientific journals, reports…)
nothing	**Electronic references, websites**

Course Description Form

1. Course name
Baath crimes in Iraq
2. Course code
3. semester/year
First semester / second stage /2023-2024
4. Date this description was prepared
10/9/2024
5. Available attendance forms
My presence
6. Number of study hours (total) / Number of units (total)
hour30/2Hours per week
7. Name of the course administrator (if more than one name is mentioned)
Name: M.Dr. Omar Jabbar Ahmed Email:omarjabar@uodiyala.edu.iq
8. Course objectives

Educating and informing students about the massacres and crimes committed by the Baath regime and the previous government, as well as the gross violations of human rights, mass graves, and secret prisons.	**Course objectives**

9. Teaching and learning strategies

Strengthening basic concepts, taking into account the basic principles of human rights that criminalize crimes committed by dictatorial regimes, crimes of genocide, and gross violations of human rights.	**Strategy**

10. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Oral tests	Lectures	The concept of crime and its types	Gain knowledge	2	the first
Oral tests	Lectures	Types of international crimes	Gain knowledge	2	the second

Oral tests	Lectures	Supreme Criminal Court decisions	Gain knowledge	2	the third
Oral and written tests	Lectures	Psychological crimes	Gain knowledge	2	Fourth
Oral and written tests	Lectures	Mechanisms of psychological crimes	Gain knowledge	2	Fifth
Oral and written tests	Lectures	Psychological effects of crimes	Gain knowledge	2	Sixth
		First exam		2	Seventh
Oral and written tests	Lectures	social crimes	Gain knowledge	2	The eighth
Oral and written tests	Lectures	The regime's position on religion	Gain knowledge	2	Ninth
Oral and written tests	Lectures	Violations of Iraqi laws	Gain knowledge	2	tenth
Oral and written tests	Lectures	Pictures of violations and crimes of the authorities	Gain knowledge	2	eleventh
Oral and written tests	Lectures	Places prisons and detention	Gain knowledge	2	twelfth
Oral and written tests	Lectures	Environmental crimes such as war and radioactive pollution	Gain knowledge	2	thirteenth
Oral and written tests	Lectures	Crimes of draining marshes and destroying orchards, crops and palm trees	Gain knowledge	2	fourteenth
Oral and written tests	Lectures	Mass grave crimes And its chronological classification	Gain knowledge	2	fifteenth
		Second exam		2	sixteenth

stageSecond

The course the second

Course Description Form

85. Course name
Probability distributions
86. codeThe decision
87. the chapter /year
Second Semester/Second Phase/2024-2024
88. Date preparedDescription
10/9/2024
89.AAvailable attendance forms
My presence
90.Number of study hours (total) / Number of units (total)
3/3
91. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Prof. Dr. Omar Adel Abdel Wahab Email: omersta@uodiyala.edu.iq
92. Course objectives

Course objectives **1- Introducing the student to probability distributions.** **2- Providing the student with topics different from probabi distributions.** **3- Explain the importance of probability distributions.**	**Course objectives**
93.	
1. Required program outcomes, teaching, learning and assessment methods **A- Cognitive objectives** **A1- The student should know the most important principles and basic concepts of probability distributions.** **A2- The student should explain the statistical concepts in probability distributions.** **A3- The student should apply the concepts of probability**	**Strategy**

distributions in theoretical and practical reality. **A4- To be creative in using modern and contemporary concepts in probability distributions.** **A5- To express an opinion or issue a judgment on statistical concepts in probability distributions.** **B - Program skill objectives** **B1 - Communication skills: - Possessing a high level of skills in information technology, working with others (love of teamwork)** **B2 - Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in probability distributions.** **Teaching and learning methods** **1- Lecture method** **2- Discussion and dialogue method** **3- Direct questions** **4- direct interrogation** **Evaluation methods** **1- Objective questions Objective Test items are divided into:** **A- True or false questions True/False Items** **B - Multiple choice questions Multiple Choice Items** **C- Interview questions Matching Items** **2- homework Homework assignments** **3- Self-assessment and peer assessment Peer and Self-Assessment** **4- Tests are divided into:** **A- Formative achievement tests accompanying teaching plans** **B - Various final achievement tests:** **1- Monthly final exams at the end of each academic month** **2- Final exams at the end of the semestertheseasontheStudy** **C- Emotional and value goals.** **A1- Establishing the principle of cooperation** **A2-Working as a team** **Teaching and learning methods** **1- Using brainstorming Brain Storming.** **2- Use of various mind maps.** **3- Use problem solving method.** **4- Using the presentation method Presentation**	

Evaluation methods

5- Objective questions Objective Test items are divided into:
for- True or false questions True/False Items
B - Multiple choice questions Multiple Choice Items
C- Interview questions Matching Items
6- homework Homework assignments
7- Self-assessment and peer assessment Peer and Self-Assessment
8- Tests are divided into:
for- Formative achievement tests accompanying teaching plans
B - Various final achievement tests:
3- Monthly final exams at the end of each academic month
4- Final exams at the end of each semester
3- Final exams at the end of the academic year.
D - General and transferable skills (other skills related to employability and personal development).
D1- Communication skills: - Possessing a high level of skills in information technology, working with others (love of teamwork)
D2- Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in probability distributions.

Teaching and learning methods

4- Using brainstorming Brain Storming.
5- Use of various mind maps.
6- Use problem solving method.
4- Using the presentation method Presentation

Evaluation methods

1- Use of tests Various achievement exams (daily, monthly,endlobeto)
2- Use of oral examination methodOrally Tests
3- Using the homework method Homework Assignments

94. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	Probability Basics	Students must be Able to understand some basic concept possibilities	3	the first
Discussion, or and written examination	My presence	random variables	Get to knowrandor variables	3	the secon
Discussion, or and written examination	My presence	discrete random variables	stripFdiscrete random variablesA how to write its functions	3	the third
Discussion, or and written examination	My presence	Properties of discrete probability functions	Learn the propertie of discrete probabil functions	3	Fourth
Discussion, or and written examination	My presence	General exercises solution	Involving students solving exercises	3	Fifth
Discussion, or and written examination	My presence	Discrete aggregate function	Introducing studen to the aggregate function and how t calculate it.	3	Sixth
Discussion, or and written examination	My presence	General exercises solution	Involving students solving exercises	3	Seventh
Discussion, or and written examination	My presence	First monthly test for the second semester		3	The eight
Discussion, or and written examination	My presence	continuous random variables	Identifying random variablesContinuous	3	Ninth
Discussion, or and written examination	My presence	Properties of continuc probability functions and the summative probability function	Definition of continuous random variables and how to write their functions	3	tenth
Discussion, or and written	My presence	Bernoulli distribution Discrete regular distribution	Understanding and knowledge	3	eleventh

examination		binomial distribution Poisson distribution			
Discussion, or and written examination	My presence	General exercises solution	Involving students solving exercises	3	twelfth
Discussion, or and written examination	My presence	normal distribution Exponential distribut Regular distribution	Understanding and knowledge	3	thirteentl
Discussion, or and written examination	My presence	General exercises solution	Involving students solving exercises	3	fourteent
Discussion, or and written examination	My presence	Second monthly test f the second semester		3	fifteenth

95. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

9- 60 marks written final exam.

8. 40 degrees of special endeavor divided into:

أأ) 10 attendance marks.

بب) 5 marks homework with.

تت) 15 marks written exam.

ثث) 10 marks oral exam.

96. Learning and teaching resources

bookPossibilities Composition Assistant Professor Aleem Ismail Al–Gharabi Dr. Dhafer Hussein Rashid Teacher Ali Abdul Hussein Al–Wakeel	Required textbooks (methodology if any)
H. Pishro-Nik, "Introduction to probability, statistics, and random processes", 2014	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)

	Electronic references, websites

Course Description Form

97. Course name	
differential equations	
98. codeThe decision	
99. the chapter /year	
First Semester/Second Phase 2024-2024	
100. Date preparedDescription	
10/9/2024	
101. AAvailable attendance forms	
My presence	
102. Number of study hours (total) / Number of units (total)	
3/3	
103. Course Instructor Name(If more than one name is mentioned)	
Name: M.M. Enas Hassan Abdel Email: inasm@uodiyala.edu.iq	
104. Course objectives	
Course objectives **1- Empowerment The student from Recognition on Equations different And its types How to Solve it.** **2-Empowerment The student from discrimination between Ty Equations differential from Rank First and the degree First.** **3- Enabling students to solve linear heterogeneous differential equations ordernFixed transactions.**	**Course objectives**

105. Strategy	
Course outcomes, teaching, learning and assessment methods **theCognitive objectives: To enable the student to:** **1-To know the most important principles and basic concepts in differential equations.** **2-To identify the types of differential equations and how to solve them.** **3- To express his opinion on the concepts of differential equations.** **4- To apply the concepts of differential equations with realistic examples and case studies.** **Skill objectiveshCourse specific** **16- Interactive skills: having the ability to communicate with the subject teacher and colleagues.** **17- Diagnostic skills: the ability to diagnose differential equations and their real-world applications..** **18- Scientific reports.** **Teaching and learning methods** **1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and understandable** **And analysis.** **2- Discussion and dialogue.** **3- Enrichment questions.** **4- Direct interrogation.** **Evaluation methods** **1-Clarification questions.** **2- True or false questions.** **3- Duties.** **4- Self-assessment.** **5- Tests (daily, monthly, final).** **Emotional and value goals** **1- Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results).** **2- Critical thinking: (the ability to criticize and distinguish between the topics presented and**	

choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method.

2- Use decision making to choose the best alternative.

3- Presentation.

Evaluation methods

1- Various tests (daily, monthly, semester, final)

2- Oral tests.

2- Duties.

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about differential equations concepts and how to use them in the fields of statistics.

2-Training and personal development skills on how to apply the concepts of differential equations in various fields.

3- Developing the student's ability to deal with the Internet.

106. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	Watches	week
Discussions Practical Application Daily Homework	Lectures	concept Equations differential And its types	Understanding and knowledge of basic concepts	3	the first
Discussions Practical Application Daily Homework	Lectures	Rank And degree The equation differential	Understanding the most important equations	3	the second
Discussions Practical Application Daily Homework	Lectures	solution The equation differential	Equation Solving Application	3	the third
Discussions Practical Application Daily Homework	Lectures	the solution The year The solution private For the equation differential	Exercise solutions	3	Fourth

Discussions Practical Application Daily Homework	**Lectures**	**Find The equation differential from the solution The year**	**Understanding and knowledge of basic concepts**	**3**	**Fifth**
		First monthly exam	**-**	**3**	**Sixth**
Discussions Practical Application Daily Homework	**Lectures**	**road season Variables**	**Understanding and knowledge**	**3**	**Seventh**
Discussions Practical Application Daily Homework	**Lectures**	**Equations differential homogeneous And other homogeneous**	**Solve the most important equation exercises**	**3**	**The eighth**
Discussions Practical Application Daily Homework	**Lectures**	**Equations differential perfect And other perfect**	**Understanding and knowledge of equations**	**3**	**Ninth**
Discussions Practical Application Daily Homework	**Lectures**	**Equations differential sin And other sin**	**Exercise solutions**	**3**	**tenth**
Discussions Practical Application Daily Homework	**Lectures**	**Equations differential sin from ranks Supreme**	**Understand the most important application of equations**	**3**	**eleventh**
Discussions Practical Application Daily Homework	**Lectures**	**General solution of the second-order homogeneous linear differential equation**	**Exercise solutions**	**3**	**twelfth**
Discussions Practical Application Daily Homework	**Lectures**	**General solution of the second-order non-homogeneous linear differential equation/Natural operator method**	**Understand the most important application of solving equations**	**3**	**thirteenth**
Discussions Practical	**Lectures**	**General solution of the second-order**	**Understanding and knowledge of**	**3**	**fourteenth**

Application Daily Homework		**non-homogeneous linear differential equation/method of indeterminate coefficients**	**applications**		
exam	**-**	**The exam is monthly**	**—**	**3**	**fifteenth**

Course Description Form

1. Course name					
Arabic Language / Second Stage					
2. Course code					
3. Semester/Year					
Second Semester/Second Phase/2024-2024					
4. Date of preparation of this description					
10/9/2023					
5. Available forms of attendance					
Daily attendance according to the scheduled schedule					
6. Number of study hours (total) Number of units (total)					
(30) study hours, two hours per week					
7. Name of the course administrator (if more than one name is mentioned)					
Name: M.M. Marwa Mahdi Saleh Email: mryamhademana@uodiyala.edu.iq					
8. Course objectives					
Course objectives					
1- Controlling students' spelling and the endings of words. 2- Raising the level of linguistic proficiency among students in general. 3- Refine the words used among students.					
9. Teaching and learning strategies					
1- How to give a lecture 2- Method of discussion and dialogue					**Strategy**
10. Course structure					
Evaluation method	**Learning method**	**Name of unit or topic**	**Required learning outcomes**	**watches**	**week**
Oral tests	**Dialogue and discussion**	**Exchange balance**	**Presentation and analysis**	**2 2**	**1 2**
homework				**2**	**3**
homework	**AFor dialogue and discussion**	**The primacy of Arabic poetry and its characteristics**	**Presentation and analysis**	**2 2 2**	**4 5 6**
Oral tests			**Show and**	**2**	**7**
homework	**Dialogue and discussionAnd**	**Islamic literature**	**analyzeto**	**2 2**	**8 9**
homework	**Dialogue and**	**Interpretation**	**Presentation and analysis**	**2 2**	**10 11**

	discussion	of Surah Ar-		2	12
homework		Rahman	Presentation	2	13
	Dialogue and		and analysis	2	14
Oral tests	discussion	The poet Ka'b		2	15
		ibn Zuhair (his	Presentation		
Oral tests	Dialogue and	life and	and analysis		
	discussion	poetry)			
Oral tests		Prose in the	Presentation		
	For dialogue	Islamic era	and analysis		
homework	and	(10 verses)			
	discussion	from Surah	Presentation		
homework		Yusuf	and analysis		
	Dialogue and	The			
homework	discussionAnd	constructive	Presentation		
		nature of	and analysis		
homework	Dialogue and	prose texts			
	discussion	Place name	Presentation		
—			and analysis		
	Dialogue and	exception			
	discussion		Presentation		
		(10 verses)	and analysis		
	Dialogue and	from Surah			
	discussion	Yusuf	Presentation		
		Andalusian	and analysis		
	Dialogue and	poetry			
	discussion		Presentation		
		Andalusian	and analysis		
	Dialogue and	prose			
	discussion		Presentation		
		(10 verses)	and analysis		
	Dialogue and	from Surah			
	discussion	Yusuf	—		
		Second month			
	-	exam			

11. Course Evaluation
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.
12. Learning and teaching resources

—	Required textbooks (methodology if available)
Pre-Islamic Literature Shawqi Dayf Islamic Literature Shawqi Dayf Ibn Malik's Alfiyya	Main references (sources)
Artistic prose: M.M. Nadia Atta Khamis	Recommended supporting books and references (scientific journals, reportsR....)
—	Electronic referencesAndInternet sites

Course Description Form

107. Course name	
MATLAB 2	
108. codeThe decision	
109. the chapter /year	
Second Semester/Second Phase/2024-2024	
110. Date preparedDescription	
10/9/2024	
111. AAvailable attendance forms	
My presence	
112. Number of study hours (total) / Number of units (total)	
45/3	
113. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Laith Talib Rashid Email: laith88@uodiyala.edu.iq	
114. Course objectives	
Course objectives • Introducing the student to the most important foundations, principles and uses of the applicationMATLABIn programming • Explaining the concept of sets and function diagrams in the programming languageMATLAB • Highlighting the importance ofMATLABIn knowing the	Course objective

form of the function in programming

- **This course aims to study programming in the languageMATLABAnd the student can write a program in the languageMATLABTo find the solution to statistical and mathematical equations**

115.

Course outcomes, teaching, learning and assessment methods

Strategy

28- Cognitive objectives:- Making the student able to

29- - To know the most important principles and basic concepts inMATLAB

30- - To identify the types of functions and relationships on functions inMATLAB

31- To learn about Microsoft applicationsTOffice

32- To know how to use each application

33- That each application be applied in any field in the educational stages

Course skill objectives

7. **The ability to understand mathematical and engineering problems and transform them into programmable equations.**
8. **The ability to build an integrated program that works logically and smoothly.**
9. **The ability to detect and correct linguistic and programming errors in a programming text, making the text more fluid.**

Teaching and learning methods

1- Managing the lecture in a practical manner related to daily life to attract the student to the subject of the lesson without straying from the core of the subject, so that the material is flexible and amenable to understanding and analysis.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results using computer applications)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and

methods of solution).
Teaching and learning methods
1- Brainstorming method
2- Use decision making to test the best alternative.
3- Presentation.
Evaluation methods

1. **Preparing class and homework assignments**
2. **Preparing reports on practical experiments**
3. **Conducting daily and semester exams.**
4. **Conducting final exams**

General and transferable skills (other skills related to employability and personal development).
1- Skills in collecting and analyzing information about computer concepts and how to use them in the fields of statistics.
2- Training and personal development skills on how to apply computer concepts in various fields.
3- Developing the student's ability to deal with the Internet..

116. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watch es	week
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Learn about the components of the interface and the role of each part.	Get to know the interfaceMATLAB	3	the firs
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	How to define one- and two-dimensional arrays	Definition of simple matrices	3	the second
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	How to transform arrays and extract data from them	Array control	3	the thi
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Learn how to call built-in functions in the language, such as trigonometric, logarithmic, and approximation functions.	Ready-made office functions	3	Fourth

Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	How to print arrays and control their decimal places	Default and coordinated printing	3	Fifth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Study of how to repeat the execution of a part of a program a specified number of times	Iterative loops	3	Sixth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	How conditional statements control array elements	Conditional statements	3	Seventh
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	How to program series functions	Sequence programming	3	The eighth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Draw mathematical functions and control the format of the drawing area	Graphing mathematical functions	3	Ninth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Multivariable Mathematical Functions Graphing and Animation	Representing complex mathematical functions	3	Tenth
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Using linear algebra to solve linear simultaneous equations	Solving simultaneous linear equations	3	eleventh
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	How to solve and program complex mathematical integrals numerically	numerical integration	3	twelfth
Daily exam, semester exam and practical	Two-hour theoretical lectures and two-hour	How to design a simple graphic user interface	Simplified interface design	3	Thirteenth

report	laboratory				
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Import data from other programs and export results to them	Import and export data	3	fourtee th
Daily exam, semester exam and practical report	Two-hour theoretical lectures and two-hour laboratory	Simplify algebraic and fractional equations usingMATLAB	Algebraic manipulation of equations	3	fifteent

117.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written, practical exams, labs, reports, etc.

10- 60 marks divided into a final written exam of 50 marks and a final practical exam of 10 marks.

9. 40 degrees of special endeavor divided into:

ج) 5 attendance marks.

ب) 10 marks homework with lab work.

أ) 15 marks written exam.

د) 10 marks practical exam.

118.Learning and teaching resources

bookMATLAB For students of the faculties of management and economics	Required textbooks (methodology if any)
Lectures prepared by the instructor "MATLAB for Engineers", Holly Moore, Pearson Publishing, 2009.	Main references (sources)
	Recommended supporting books and references (scientific journals, reports, etc.)
	Electronic references, websites

Course Description Form

119. Course name	
Quality Control 2	
120. codeThe decision	
121. the chapter /year	
Second semester/second stage/2024-2024	
122. Date preparedDescription	
10/9/2024	
123. AAvailable attendance forms	
My presence	
124. Number of study hours (total) / Number of units (total)	
2/2	
125. Course Instructor Name(If more than one name is mentioned)	
Name: A.M.Dr. Enaam Abdul Rahman Noman Email: inaamsta@uodiyala.edu.iq	
126. Course objectives	
Course objectives • **Introducing the student to the theoretical foundations of the subject as well as its practical application.** • **It aims to build a modelQuality controlRealistic based onPractical reality** • **Features that must be available in order to get the bestQuality control modelSimulates practical realityFor studies** • **studied** • **building skillsQuality controlHow to get an analysis of the phenomenon studied through**	**Course objectiv**

• Knowing the factor affecting it.	
127.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:** **34- Understanding the basicsQuality control** **35- to understandStatistical control of quality** **36- to understandBasics of using the quality control model** **37- to understandUses of quality control** **38- Understanding the stages of the quality control process** **39- Understanding the disadvantages of using quality control panels** **40- to understandQuality control maps** **41- to understandArithmetic mean panel** **42- to understandRange plate** **Course skill objectives** **19- Interactive skills: the ability to communicate with the subject teacher and colleagues.** **20- Diagnostic skills: the ability to deal with the statistical problem.** **21- Analytical skills: The ability to analyze and distinguish between different types of analytical commands in the program.** **Teaching and learning methods** **1-Presenting basic theories, meaning that learning will begin with presenting basic theories and concepts.For quality control** **2- Analysis paintings And representedIn the process of building a panel, by buildingThe board for the phenomenon under study.** **3- Use of studiesEconomicPractical applications and experiments in various fields, such as:** **4- Agricultural sciences and medical sciences, for the purpose of explaining how to useControl panelIn practical life.** **5- Providing individual guidance to students to understand theories and practical exercises, and guiding them in solving problems and understanding results.** **6- Organizing group discussions aboutProper panel building processes, which contributes to the exchange of ideas and mutual learning among students.** **7- Previous studies can be used as examples to analyze and**	**Strategy**

understand the results and statistical analyses used in
For the arithmetic mean board
8- Providing continuous assessment of students' performance and providing feedback to guide them and improve their understanding and skills in analysis.
control panels
Evaluation methods

1-Clarification questions
2- True or false questions
3- Duties
22- Self-assessment
23- Tests (daily, monthly, semester, final)).

Emotional and value goals

7- The ability to examine and evaluate the topics raised.
8- The ability to criticize, distinguish and choose between the topics presented.
9- The ability to produce new ideas

Teaching and learning methods
1- Brainstorming method
2- Use decision making to test the best alternative.
3- Presentation.
Evaluation methods
- Various tests (daily, monthly, semester, final)
2-Oral tests
3- Duties
General and transferable skills (other skills related to employability and personal development).
1- Skills in collecting and analyzing information about the concepts of designing and analyzing experiments and how to use them in agricultural fields.
2- Training and personal development skills on how to apply experimental design concepts in various fields.
3- Developing the student's ability to build a correct experiment.

128. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presen		The concept of qualitative variables	3	the first

Discussion, or and written examination	My presen		Types of qualitative variables	3	the secor
Discussion, or and written examination	My presen		The importance of qualitative variables	3	the third
Discussion, or and written examination	My presen		How to break the non-conformity	3	Fourth
Discussion, or and written examination	My presen		Mean fraction nonconformity method	3	Fifth
Discussion, or and written examination	My presen		Number of violations method	3	Sixth
Discussion, or and written examination	My presen		Average number of violations panel	3	Seventh
Discussion, or and written examination	My presen		Moving Average Panel	3	The eight
Discussion, or and written examination	My presen		The importance of the moving average panel	3	Ninth
Discussion, or and written examination	My presen		The concept of the moving geometric center board	3	tenth
Discussion, or and written examination	My presen		The relationship between the geometric board and the moving average	3	eleventh
Discussion, or and written examination	My presen		Mask panel and its calculation methods	3	twelfth
Discussion, or and written examination	My presen		The importance of using it	3	thirteent
Discussion, or and written examination	My presen		Importance and methods of calculating multivariate panel	3	fourteen
Discussion, or and written examination	My presen		Monthly exam	3	fifteenth

129.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as

daily preparation, daily, oral, monthly and written exams, reports, etc. **11- 60 marks written final exam.** **10. 40 degrees of special endeavor divided into:** **ذذ) 5 attendance marks.** **رر) 5 marks homework with.** **زز) 15 marks first written exam** **سس) 15 marks for the second written exam**

130. Learning and teaching resources	
Statistical control of quality **Prof. Nazia Al-Mashhadani**	**Required textbooks (methodology if any)**
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
Nothing	**Electronic references, websites**

Course Description Form

131. Course name
Statistical surveys
132. codeThe decision
133. the chapter /year
Second semester/second stage/2023-2024
134. Date preparedDescription
10/9/2024
135. AAvailable attendance forms
My presence
136. Number of study hours (total) / Number of units (total)
3/3
137. Course Instructor Name(If more than one name is mentioned)
Name: M. Hisham Faroun Email:hisham@uodiyala.edu.iq
138. Course objectives

Course objectives • **Introducing the student to the most important foundations and principles of surveying** • **Explaining the concept of statistical surveys** • **Highlighting the importance of surveys in the application** • **This course aims to study survey methods.** **The student should be able to classify, collect and descri data.**	**Course objectives**

139.	
Course outcomes, teaching, learning and assessment methods **43- Cognitive objectives:- Making the student able to** **44- - To know the most important principles and basic concepts in surveys.** **45- - To determine the survey methods**	**Strategy**

46- To understand the concept of survey methods
47- To express his opinion on the concepts of surveys
48- To apply survey concepts with real-life examples and case studies.

Course skill objectives

24- - Interactive skills: having the ability to communicate with the subject teacher and colleagues
25- - Diagnostic skills: the ability to diagnose problems and solve them.
26- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.
2-Discussion and dialogue
3- Enrichment questions
4- Direct interrogation

Evaluation methods

1-Clarification questions
2- True or false questions
3- Duties
27- Self-assessment
28- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)
2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)
3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method
2- Use decision making to test the best alternative.
3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final) **2-Oral tests** **3- Duties** **General and transferable skills (other skills related to employability and personal development).** **1- Skills in collecting and analyzing information about economic measurement concepts and how to use them in the fields of statistics.** **2- Training and personal development skills on how to apply appreciation concepts in different fields.** **3- Developing the student's ability to deal with the Internet..**

140. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	review	Basic concepts	3	the first
Discussion, or and written examination	My presence	review	Basic concepts	3	the secor
Discussion, or and written examination	My presence	Introduction, definitions and terms, basic steps for sample design	introduction	3	the third
Discussion, or and written examination	My presence			3	Fourth
Discussion, or and written examination	My presence	Simple Random Sampling: Introduction, Selecting a Simple Random Sample, Symbols and Terminology, Some Mathematical Aspects, Examples, Exercises	Methods and ways	3	Fifth
Discussion, or and written examination	My presence			3	Sixth
Discussion, or and written	My presence	Confidence limits, ratio	Practical application	3	Seventh

examination		estimationRExampl es, exercises			
Discussion, or and written examination	My presence			3	The eight
Discussion, or and written examination	My presence	bias in estimating the ratioRConfidence limits, examples, exercises	Methods and techniques	3	Ninth
Discussion, or and written examination	My presence			3	tenth
Discussion, or and written examination	My presence	Percentage Preview: Introduction, Variance of Estimates, Some Mathematical Aspects	Practical application	3	eleventh
Discussion, or and written examination	My presence			3	twelfth
Discussion, or and written examination	My presence	Confidence limits, examples, exercises	Practical exercises	3	thirteent
Discussion, or and written examination	My presence			3	fourteen
Discussion, or and written examination	My presence	First semester exam		3	fifteenth

141.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

12- 60 marks written final exam.

11. 40 degrees of special endeavor divided into:

شش) 5 attendance marks.

صص) 5-10 marks homework with.

ضض) 15 marks written exam.

ططط)5 marks oral exam

142.Learning and teaching resources

bookPrinciples of Statistics Dr. Dhafer Hussein Rashid	Required textbooks (methodology if any)

	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Websites and the Internet..

Course Description Form

143. Course name	
Economic Statistics 2	
144. codeThe decision	
145. the chapter /year	
Second semester/second stage/2024-2024	
146. Date preparedDescription	
10/9/2024	
147. AAvailable attendance forms	
My presence	
148. Number of study hours (total) / Number of units (total)	
3/3	
149. Course Instructor Name(If more than one name is mentioned)	
Name: Asst. Dr. Yasser Ghanem Yahya Email: dr.yasser94@uodiyala.edu.iq	
150. Course objectives	
Course objectives • **Introducing the student to the most important foundations and principles of economic statistics** • **Explaining the concept of economic statistics** • **Highlighting the importance of economic statistics in practice** • **This course aims to study the methods of economic statistics. The student should be able to classify, collect and descri data.**	**Course objectives**
151.	
Course outcomes, teaching, learning and assessment methods **49- Cognitive objectives:- Making the student able to** **50- - To know the most important principles and basic**	**Strategy**

concepts in economic statistics.

51- - To determine the methods of economic statistics.

52- To understand the concept of economic statistics methods

53- To express his opinion on the concepts of economic statistics

54- To apply survey concepts with real-life examples and case studies.

Course skill objectives

29- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

30- - Diagnostic skills: the ability to diagnose problems and solve them.

31- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

32- Self-assessment

33- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative. **3- Presentation.** **Evaluation methods** **- Various tests (daily, monthly, semester, final)** **2-Oral tests** **3- Duties** **General and transferable skills (other skills related to employability and personal development).** **1- Skills in collecting and analyzing information about economic measurement concepts and how to use them in the fields of statistics.** **2- Training and personal development skills on how to apply appreciation concepts in different fields.** **3- Developing the student's ability to deal with the Internet..**	

152. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral and written examinatio	My presen	Introduction to Agricultural Statistics	Introduction to Agricultural Statistics	3	the first
Discussion, oral and written examinatio	My presen	Types of agricultural statistics	Types of agricultural statistics	3	the secon
Discussion, oral and written examinatio	My presen	Census methods	Census methods	3	the third
Discussion, oral and written examinatio	My presen	Reasons for using samples in censuses	Reasons for using samples in censuses	3	Fourth
Discussion, oral and written examinatio	My presen	Statistical measures of exploited lands	Statistical measures of exploited lands	3	Fifth
Discussion,	My presen	Statistical	Statistical	3	Sixth

oral and written examinatio		measures of the productivity of the exploited land	measures of the productivity of the exploited land		
Discussion, oral and written examinatio	My presen	Statistical measures of yield change per dunum	Statistical measures of yield change per dunum	3	Seventh
Discussion, oral and written examinatio	My presen	reclaimed lands	reclaimed lands	3	The eight
Discussion, oral and written examinatio	My presen	Components of agricultural output	Components of agricultural output	3	Ninth
Discussion, oral and written examinatio	My presen	Agricultural output measures	Agricultural output measures	3	tenth
Discussion, oral and written examinatio	My presen	Animal statistics	Animal statistics	3	eleventh
Discussion, oral and written examinatio	My presen	Statistical measures of animal numbers	Statistical measures of animal numbers	3	twelfth
Discussion, oral a written examinatio	My presen	Statistical measures of animal reproduction	Statistical measures of animal reproduction	3	thirteenth
Discussion, oral a written examinatio	My presen	Practical examples using one of the ready-made software	Practical examples using one of the ready-made software	3	fourteent
Discussion, oral a	My presen	Second semester exam	Second semester exam	3	fifteenth

written examinatio					

153.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

13- 60 marks written final exam.

12. 40 degrees of special endeavor divided into:

ظظ)5 attendance marks.

عع)5-10 marks homework with.

غغ)15 marks written exam.

فف) 5 marks oral exam.

154.Learning and teaching resources

bookPrinciples of Statistics Dr. Dhafer Hussein Rashid	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

155. Course name:	
Linear algebra	
156. codeThe decision	
157. the chapter /Year:	
Second semester/second stage/2023-2024	
158. Date preparedDescription:	
10/9/2024	
159. AAvailable attendance forms: Halls	
My presence	
160. Number of study hours (total) / Number of units (total):	
3/3	
161. Course Instructor Name(If more than one name is mentioned)	
Name: M.M. Amal Hadi Rashid Email:amal@uodiyala.edu.iq	
162. Course objectives	
The linear algebra course aims to provi knowledge and awareness of mathematic methods, familiarize students with the use matrices, perform all elementary operation and learn about the types of matrices ar vectors in solving various statistical models.	**Course objectives**
163. Teaching and learning strategies	
A- Knowledge and understanding	**Strategy**

1- Ability to use statistical theory 2- Providing the student with the ability to formulate realist issues in the form of matrices.And vectors. b- Subject-specific skills 1- Skills in employing and using statistical tools 2-Student's familiarity with some applications ofLinear algebra advanced statistical topics.

164. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Monthly and daily exams and participations	My presence	Elementary operations and inverses of elementary operations	knowledge and understanding	3	1
Monthly and daily exams and participations	My presence	Equivalent matrices	Understand mathematically the meaning of equivalence and how to use it.	3	2
Monthly and daily exams and participations	My presence	The suppressive formula and the natural formula	Use these formulas to find the rank of a matrix.	3	3

Monthly and daily exams and participations	**My presence**	**Primitive matrices**	**Learn about some types of matrices and how to use them in other topics.**	**3**	**4**
Monthly and daily exams and participations	**My presence**	**Linear equations**	**Simplifying mathematical operations and how to formulate them mathematically in the form of a matrix**	**3**	**5**
Monthly and daily exams and participations	**My presence**	**Methods for solving linear equations**	**Simplifying mathematical operations and how to formulate them mathematically in the form of a matrix**	**3**	**6**
Monthly and daily exams and participations	**My presence**	**Vectors**	**Understanding the mathematical concepts related to the subject**	**3**	**7**
Monthly and daily exams and participations	**My presence**	**Approved vectors**	**Understanding the mathematical concepts related to the subject**	**3**	**8**
Monthly and daily exams and participations	**My presence**	**Linear structures**	**Simplifying mathematical operations and how to formulate them in matrix form**	**3**	**9**

Monthly and daily exams and participations	**My presence**	**Solve the question**	**How to deal with realistic issues**	**3**	**10**
Monthly and daily exams and participations	**My presence**	**latent roots**	**Simplifying mathematical operations and how to formulate them in matrix form**	**3**	**11**
Monthly and daily exams and participations	**My presence**	**Linear models**	**Simplifying mathematical operations and how to formulate them in matrix form**	**3**	**12**
Monthly and daily exams and participations	**My presence**	**Solve the question**	**How to deal with realistic issues**	**3**	**13**
Monthly and daily exams and participations	**My presence**	**Conditional distributions Application of matrices in advanced statistical topics**	**Application of matrices in advanced statistical topics**	**3**	**14**
Monthly and daily exams and participat	**My presence**	**Second semester exam**	**Application of matrices in advanced statistical topics**	**3**	**15**

ions					

165.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

14- 60 marks written final exam.

13. 40 degrees of special endeavor divided into:

ق)ق 5 attendance marks.

ك)5-10 marks homework.

ل) 15 marks written exam.

5 marks oral exam

166.Learning and teaching resources

Introduction to Linear Algebra Matrices for Management and Economics Students	**Required textbooks (methodology if any)**
Schaum Briefs Series	**Main references (sources)**
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Monthly and daily exams and participations	**My presence**	**Solve the questions**	**How to deal with realistic issues**	**3**	**13**
Monthly and daily exams and participations	**My presence**	**Conditional distributions Application of matrices in advanced statistica**	**Application of matrices in advanced statistical topics**	**3**	**14**

		l topics			
Monthly and daily exams and participations	My presence	Second semester exam	Application of matrices in advanced statistical topics	3	15

167.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

15- 60 marks written final exam.

14. 40 degrees of special endeavor divided into:

مم) 5 attendance marks.

نن)5-10 marks homework.

ەە) 15 marks written exam.

5 marks oral exam

168.Learning and teaching resources

Introduction to Linear Algebra Matrices for Management and Economics Students	Required textbooks (methodology if any)
Schaum Briefs Series	Main references (sources)

Monthly and daily exams and participations	My presence	Solve the question	How to deal with realistic issues	3	13
Monthly and daily exams and participations	My presence	Conditional distributions Application of matrices in advanced statistical topics	Application of matrices in advanced statistical topics	3	14
Monthly and daily exams and participations	My presence	Second semester exam	Application of matrices in advanced statistical topics	3	15

169. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

16- 60 marks written final exam.

15. 40 degrees of special endeavor divided into:

وو) 5 attendance marks.

يي) 5-10 marks homework.

ااا) 15 marks written exam.

5 marks oral exam

170. Learning and teaching resources

Introduction to Linear Algebra Matrices for Management and Economics Students	**Required textbooks (methodology if any)**
Schaum Briefs Series	**Main references (sources)**

stageThird

The course the first

1. Course name
Demographic Statistics 1
2. Course code
3. Semester/Year
First Semester / Third Stage / 2024-2024
4. Date of preparation of this description
10/9/2024
5. Available forms of attendance
My presence
6. Number of study hours (total) Number of units (total)
3/3
an one name is mentioned)We wish you
Name: Dr. Wahab Salem Mohammed Email: Wahabsta@uodiyala.edu.iq
8. Course objectives
Course objectives
1- Educational benefit, by getting to know the conceptDemographic statistics And the concepts associated with it. 2- Ways toStatistics Demographic 3- Learn about the importance and types of applicationsstatistical In the demographic field
9. Teaching and learning strategies

1-Know the studentBasic concepts of demographic statistics 2- Expanding the student's scientific horizons by linking different cognitive information and then applying it in his advanced research studies. b-Subject-specific skills	Strategy

1-ApplicationsDemographic statisticsIn realityMy statistics 2- Know the waysModerninDemographic statisticsIn order to employ them for policy experiments and ways to develop them.	

10. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Homework + daily exam	Giving focused lectures with practical examples	Definitions and concepts	Some basic concepts of demographic analysis	3	1
Homework	Giving focused lectures with practical examples	a lecture	Nature of demographic information	3	2
Homework + Daily Exam	Mathematical examples	Understanding Relationships	Methods with data	3	3
Homework	Mathematical examples	Key concepts	Data and information available from United Nations offices	3	4
Homework	Mathematical examples	Theoretical steps	population growth rates	3	5
Homework	Mathematical examples	Real-life applications	fertility rates	3	6
Homework	Mathematical examples	Real-life applications	Segmental mortality rates	3	7
Homework	Mathematical examples	Key concepts	Life expectancy	3	8
Homewo	Mathemati	monthly test	First exam	3	9

rk	cal examples				
Homework	Mathematical examples	Key concepts	Life tables	3	10
Homework	Mathematical examples	Understanding Relationships	Fertility measures	3	11
Homework	Mathematical examples	Key concepts	gender ratio	3	12
Homework	Mathematical examples	Understanding Relationships	Other concepts about population	3	13
Homework	Mathematical examples	Key concepts	Life tables	3	14
			Final semester exam	3	15

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily, oral, and monthly preparation, written exams, reports, etc..
1)60Grade for the final written exam,
40 (2 points related to striving, divided into:
a) 5 attendance marks.
d) 15 marks for the written examAt a rate of two exams per month.
d) 5 marks for the oral exam

12. Learning and teaching resources

Population census Dr. Abdul Hussein Zini	Required textbooks (methodology if available)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reportsR....)
(Ministry of Planning - Central Statistical Agency - Annual Report)	Electronic referencesAndInternet sites

Course Description Form

171. Course name
Linear programming
172. codeThe decision
173. the chapter /year
First semester/third stage/2023-2024
174. Date preparedDescription
10/9/2024
175. AAvailable attendance forms
My presence
176. Number of study hours (total) / Number of units (total)
3/3
177. Course Instructor Name(If more than one name is mentioned)
Name: M. Karim Qasim Muhammad Email:ka1973reem@gmail.com
178. Course objectives

Course objectives • **Introducing the student to the most important foundations and principles of linear programming** • **Explaining the concept of programming mathematical problems** • **Highlighting the importance of mathematical concepts and solution methods** • **This course aims to develop the ability to build models and write computer programs.**	**Course objectives Academic**

179.	
Course outcomes, teaching, learning and assessment methods **55- Cognitive objectives:- Making the student able to** **56- - To know the most important principles and basic concepts in mathematical programming.** **57- - To identify the types of functions and relationships on functions.** **58- To learn programming tools and make the best decisions** **59- To express his opinion on the concepts of**	**Strategy**

mathematics and programming

60- To apply mathematical concepts with real-life examples and case studies.

Course skill objectives

34- - Interactive skills: having the ability to communicate with the subject teacher and colleagues

35- - Diagnostic skills: the ability to build programs and their real-world applications.

36- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

37- Self-assessment

38- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a logical, mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to

employability and personal development). 1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics and computers. 2- Training and personal development skills on how to apply programming mathematics concepts in various fields. 3- Developing the student's ability to deal with the Internet..	

180. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral and written examinatio and practica application	My presen	Introduction to OR	Students must be Able to understand some concepts BasicIn programming, mathematics, operations research, programming an computersGive examples	3	the first
Discussion, oral and written examinatio and practica application	My presen	Introduction to linear programming	Learn about li mathematical models, li programming, and operat research.	3	the secon
Discussion, oral and written examinatio and practica application	My presen	Method of solving linear programming	Methods for solving li programs	3	the third
Discussion, oral and written examinatio and practica application	My presen	Graphical method	Drawing method as a meth for solving linear programs	3	Fourth
Discussion, oral and written examinatio and practica application	My presen	Simplex method	Optimal solution method us simplex	3	Fifth
Discussion, oral and written examinatio	My presen	First exam	First test and evaluation	3	Sixth

and practica application					
Discussion, oral and written examinatio and practica application	My presen	Dual model	Duality and the opposite m	3	Seventh
Discussion and written test and practica application	My presen	Primal and Dual model	The relationship between prototype and the binary	3	The eight
Discussion, oral and written examinatio and practica application	My presen	Dual simplex	Opposite simplex and usefulness in solving	3	Ninth
Discussion, oral and written examinatio and practica application	My presen	Sensitivity Analysis	The concept of sensiti analysis and the changes occur	3	tenth
Discussion, oral and written examinatio and practica application	My presen	Second exam	Second test and evaluation	3	eleventh
Discussion, oral and written examinatio and practica application	My presen	Transportation models	Concept of transport mo and solution methods	3	twelfth
Discussion, oral and written examinatio and practica application	My presen	Assignment problems	The concept of the alloca problem and methods solution	3	thirteentl
Discussion, oral and	My presen	Network analysis	Business Check Ana Benefits of this method analyzing projects	3	fourteent

written examinatio and practic application					
Discussion and written test and practic application	My presen	Game theory.	The concept of competi and the theory of profit loss	3	fifteenth

181. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

17- 60 marks written final exam.

16. 40 degrees of special endeavor divided into:

بببب) 5 attendance marks.

تتتت) 5-10 marks homework with.

ثثثث) 15 marks written exam.

ججج) 5 marks oral exam.

182. Learning and teaching resources

Introduction to Operations Research	Required textbooks (methodology if any)
Gupta. Er. Prem Kumar, 2019 "Proplems in operations Research Principles and Solutions" Tribunals and Forums of New Delhi. India, ISBN: 978-81-219-0968-6.	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
Internet	Electronic references, websites

Course Description Form

183. Course name	
Linear Regression Analysis 1	
184. codeThe decision	
185. the chapter /year	
First semester/fourth stage/2024-2024	
186. Date preparedDescription	
10/9/2024	
187. AAvailable attendance forms	
My presence	
188. Number of study hours (total) / Number of units (total)	
3/3	
189. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Aqil Hamid Farhan Email:aqeelsta@uodiyala.edu.iq	
190. Course objectives	
Course objectives • **Introducing the student to the theoretical foundations of the subject as well as its practical application.** • **It aims to build a modeldeclineRealistic based onPractical reality** • **Features that must be available in order to get the bestLinear regression modelSimulates practical realityFor studies** • **studied** • **Building analytical skillsdeclineHow to get an analysis of the phenomenon studied through** • **Knowing the factor affecting it.**	**Course objectives Academic**
191.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:** **61- Understanding the basicsLinear regression analysis** **62- to understandSimple linear regression model** **63- to understandBasics of using a regression model** **64- to understandAssumptions of the regression model** **65- Understanding the stages of building a regression model**	**Strategy**

66- Understanding the assumptions of the random error term

67- to understandModel parameter estimation processes

68- to understandOrdinary least squares method

69- to understandModel parameter testing methods

Course skill objectives

39- Interactive skills: the ability to communicate with the subject teacher and colleagues.

40- Diagnostic skills: the ability to deal with the statistical problem.

41- Analytical skills: the ability to analyze and distinguish between different types of orders.AnalyticalIn the program.

Teaching and learning methods

1-Presenting basic theories, meaning that learning will begin with presenting basic theories and concepts.to decline

2- Analysis declineAnd representedBy modelSimple, by buildingModel of the phenomenon studied.

3- Use of studiesEconomicPractical applications and experiments in various fields, such as:

4- Agricultural sciences and medical sciences, for the purpose of explaining how to useRegression modelIn practical life.

5- Providing individual guidance to students to understand theories and practical exercises, and guiding them in solving problems and understanding results.

6- Organizing group discussions aboutRegression model building processes, which contributes to the exchange of ideas and mutual learning among students.

7- Previous studies can be used as examples to analyze and understand the results and statistical analyses used inSimple linear regression model

8- Providing continuous assessment of students' performance and providing feedback to guide them and improve their understanding and skills in analysis.

simple linear regression

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

42- Self-assessment

43- Tests (daily, monthly, semester, final)).

Emotional and value goals

10- The ability to examine and evaluate the topics raised.

11- The ability to criticize, distinguish and choose between the topics presented.

12- The ability to produce new ideas

Teaching and learning methods
1- Brainstorming method
2- Use decision making to test the best alternative.
3- Presentation.
Evaluation methods
- Various tests (daily, monthly, semester, final)
2-Oral tests
3- Duties

General and transferable skills (other skills related to employability and personal development).
1- Skills in collecting and analyzing information about the concepts of designing and analyzing experiments and how to use them in agricultural fields.
2- Training and personal development skills on how to apply experimental design concepts in various fields.
3- Developing the student's ability to build a correct experiment.

192. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, ora and written examination	My presence		The concept of linea regression	3	the first
Discussion, ora and written examination	My presence		Types of regression models	3	the secon
Discussion, ora and written examination	My presence		Uses of regression	3	the third
Discussion, ora and written examination	My presence		Simple linea regression model	3	Fourth
Discussion, ora and written examination	My presence		Methods for estimating parameters of a simple linear regression model	3	Fifth
Discussion, ora and written examination	My presence		Statistical inference for simple linear regression models	3	Sixth
Discussion, ora and written examination	My presence		Significance tests for ability parameters	3	Seventh
Discussion, ora and written examination	My presence		Confidence limits for estimated parameters	3	The eight
Discussion, ora and written examination	My presence		Estimating error variance	3	Ninth
Discussion, ora	My presence		Estimate by period	3	tenth

and written examination					
Discussion, ora and written examination	My presence		Predicting a period	3	eleventh
Discussion, ora and written examination	My presence		Analysis of variance table	3	twelfth
Discussion, ora and written examination	My presence		Nonlinear models	3	thirteentl
Discussion, ora and written examination	My presence		Methods for estimating models for simple nonlinearity	3	fourteent
Discussion, ora and written examination	My presence		Second semester exam	3	fifteenth

193.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

18- 60 marks written final exam.

17. 40 degrees of special endeavor divided into:

ججج) 5 attendance marks.

خخخ) 5 marks homework with.

ددد) 15 marks first written exam

ذذذ) 15 marks for the second written exam

194.Learning and teaching resources

Regression analysis **Prof. Dr. Khashe' Al-Rawi**	**Required textbooks (methodology if any)**
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
nothing	**Electronic references, websites**

Course Description Form

195. Course name
Vital Statistics 1
196. codeThe decision
197. the chapter /year
First Semester/Third Stage/2023-2024
198. Date preparedDescription
10/9/2024
199. AAvailable attendance forms
My presence
200. Number of study hours (total) / Number of units (total)
2/2
201. Course Instructor Name(If more than one name is mentioned)
Name: M.M. Amal Hadi Rashid Email: amal@uodiyala.edu.iq
202. Course objectives

Course objectives	Course objectives
Course objectives 1- Application to actual data/Assign students to read the topic in advance from several academic sources related to the course and lecture. 2- After teaching the subject, the researcher will be able to assist researchers in various scientific applications. 3- Being able to analyze data and draw conclusions that lead to sound decision making 4- Students prepare brief reports on some of the course topics and discuss them in the lecture. 1- Practical exercises on how to measure the levels of (theme) according to the available data and how to interpret the results 2- How to use statistical software such asSPSS, MINTAB, SAS The student graduates with knowledge of this important applied material in all research fields.	

203.	
knowledge and understanding - Ability to analyze data using statistical programs. Providing students with applied statistical knowledge in various areas of life, such as social, economic, and others. - The ability to familiarize the student with statistical tests and interest in studying cases in the health and agricultural fields and providing data for application and extracting results.	Strategy

- The student's understanding of the concept of analysis and benefiting from it in his future practical life.

Subject-specific skills

- **Employment skills using appropriate statistical analysis of data. Through the theoretical aspect on real data.**
- **Skills to reach future decisions and make appropria decisions based on foundations scientifically sound**

Teaching and learning methods

- **Giving lectures and providing continuous and practical exercises on vari phenomena such as economic and demographic.**
-
- **And others to know the use of statistics in various fields**
- **Organize group discussions aboutAnalyze a specific time series, wh contributes to the exchange of ideas and mutual learning among students.**

Evaluation methods

Periodic exams and discussions on the lecture topic

thinking skills

- **Think and listen to the question.**
- **Understand the question.**
- **Focus on the requirements of the question.**
- **Accurate and scientific answer to the requirements the question**

204. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral an written examinatio	My presence	Metrics and data in the biosphere	Metrics and data in the biosphere	2	the first
Discussion, oral an written examinatio	My presence	Rates and measures	Rates and measures	2	the secor
Discussion, oral an written examinatio	My presence	Event, probability, and conditional probability	Event, probability, and conditional probability	2	the third
Discussion, oral an written examinatio	My presence	Some important discrete distributions in the biological field (binomial and Poisson)	Some important discrete distributions in the biological field (binomial and Poisson)	2	Fourth
Discussion, oral an written examinatio and practical application	My presence	Some important continuous distributions in the biological domain	Some important continuous distributions in the biological domain (exponential, normal,	2	Fifth

		(exponential, normal, and chi-square,F T,)	and chi-square,F T,)		
Discussion, oral an written examinatio	My presence		Examthe first	2	Sixth
Discussion, oral an written examinatio	My presence	Vital applications of probability distributions.	Vital applications of probability distributions.	2	Seventh
Discussion, oral an written examinatio	My presence	Types of hypotheses and standard error.	Types of hypotheses and standard error.	2	The eight
Discussion, oral an written examinatio	My presence	Average and sample tests	Average and sample tests	2	Ninth
Discussion, oral an written examinatio	My presence	Two-sample tests and one-criterion analysis of variance	Two-sample tests and one-criterion analysis of variance	2	tenth
Discussion, oral an written examinatio	My presence	Second exam	Second exam	2	eleventh
Discussion, oral an written examinatio	My presence	Two-criterion analysis of variance	Two-criterion analysis of variance	2	twelfth
Discussion, oral an written examinatio	My presence	Multiple comparisons	Multiple comparisons	2	thirteent
Discussion, oral an written examinatio	My presence	Contrast tests	Contrast tests	2	fourteen
Discussion, oral an written examinatio	My presence	First semester exam	Vital applications	2	fifteenth

205.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

19- 50 marks for a final written exam and 10 marks for a final practical exam.

18. 40 degrees of special endeavor divided into:

rrr) 5 attendance marks.

zzz) 5-10 marks for homework with a practical exam.

sss) 15 marks written exam.

shshsh) 5 marks oral exam.

206.Learning and teaching resources

There are no books or methodological sources.	Required textbooks (methodology any)
Computer applications using softwareSPSS Kamal Alwan Al-Mashhadani, Dr. Imad Hazem Abboudi Dr. Suhail Najm Abdullah	Main references (sources)

Department of Statistics, College of Administration and Economics, University of Baghdad / 2012 **Biostatistics using softwarespss** **Assistant Professor Dr. Jassim Mohammed Khalaf Al-Tamimi** **Professor Dr. Wissam Malik Daoud**	
Biostatistics A foundation for analysis in the health sciences	**Recommended supporting books and references (scientific journals, reports…)**
	Electronic references, websites

Course Description Form

207. Course name	
Data management usingSPSS 1	
208. codeThe decision	
209. the chapter /year	
First semester/third stage/2024-2024	
210. Date preparedDescription	
10/9/2024	
211. AAvailable attendance forms	
My presence	
212. Number of study hours (total) / Number of units (total)	
3/3	
213. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Laith Talib Rashid Email: laith88@uodiyala.edu.iq	
214. Course objectives	
Course objectives • **Introducing the student to the theoretical foundations of the subject as well as its practical application.** • **It aims to build a design model that matches reality based on experience.** • **And characteristics that must be available in order to obtain the best design that simulates the practical reality of phenomena.** • **studied** • **Building statistical analysis skills and how to obtain an analysis of the phenomenon studied through** • **Knowing the factor affecting it.**	**Course objectives**
215.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:** **70- Introducing the student to the most important windows in the programSPSS** **71- Introducing the student to the importance of the**	**Strategy**

programSPSS

72- Statement of the most important characteristics of the windowData view

73- Introducing the student to how to design a statistical questionnaire

74- Providing the student with applications on data arrangement, variable transformation, data merging, and data partitioning.

75- Providing students with applications on questionnaire analysis

76- To know the program windowsSPSS.

77- to knowFor the student to exploreData

78- To guide the student to distinguish between the types of variables in the program.

79- The student should know how to deal with data and how to test it according to the normal distribution.

80- The student should be able to explain the results of hypothesis testing for quantitative and descriptive data.

81- The student must complete homework on the homogeneity tests.

Course skill objectives

44- skillsInteractive:Have the ability to communicate with the subject teacherAnd colleagues.

45- skillsDiagnostic:Ability to deal with the problemStatistics.

46- skillsAnalytical:Ability to analyze and distinguish between different types of commandsAnalyticalIn the program

Teaching and learning methods

1-The lecture.

2-DiscussionAnd dialogue.

3-QuestionsEnrichment.

47- interrogationLive.

Evaluation methods

1- True and false questions.

2- Multiple choice questions.

3- Clarification questions.

4- Duties

5- Self-assessment.

6- Exams (monthly, semester, final).

Emotional and value goals

13- The ability to examine and evaluate the topics raised.

14- The ability to criticize, distinguish and choose between the topics presented.

15- The ability to produce new ideas

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- **Skills to distinguish between types of variables.**
2- **Training skills to conduct various statistical tests.**
3- **Questionnaire preparation skills.**

216. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence		Data types, program window typesSPSS	3	the first
Discussion, or and written examination	My presence		The most important characteristics of NafidahData view, data entry	3	the secon
Discussion, or and written examination	My presence		Names and descriptions of variables in a sheetVariable view, creating subtotals of variables, designing statistical questionnaires	3	the third
Discussion, or and written examination	My presence		Data arrangement, variable transformation, data merging, data partitioning	3	Fourth
Discussion, or and written examination	My presence		Collect data, select a portion of data, weight data, add a date to data	3	Fifth
Discussion, or and written examination	My presence		Data conversion, data counting, data encoding	3	Sixth
Discussion, or and written examination	My presence		Variable tab, auto-coding	3	Seventh
Discussion, or and written examination	My presence		Rank cases and their types, estimation of missing values	3	The eight
Discussion, or and written examination	My presence		Data exploration, chartstem and leaf, boxplot	3	Ninth
Discussion, or	My presence		iterative scheme,	3	tenth

and written examination			chartNormal QQ Plot		
Discussion, or and written examination	My presence		a planDetrended Normal QQ Plot, Confidence Interval Formation	3	eleventh
Discussion, or and written examination	My presence		Trimmed mean, quartiles and percentiles	3	twelfth
Discussion, or and written examination	My presence		Normal distribution test by skewness coefficient ratio, homogeneity of variance test	3	thirteenth
Discussion, or and written examination	My presence		Testing homogeneity of variance using a plotSpread vs. Levene test, dealing with missing values	3	fourteent
Discussion, or and written examination	My presence		First semester exam	3	fifteenth

217.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

20- 60 marks written final exam.

19. 40 degrees of special endeavor divided into:

5 attendance marks.

5 marks homework with.

15 marks first written exam

15 marks for the second written exam

218.Learning and teaching resources

	Required textbooks (methodology if any)
Statistical program analysisSPSS Composition Dr. Ihab Abdel Salam Your guide to the statistical programSPSS Composition Saad Zaghloul	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
nothing	Electronic references, websites

Course Description Form

219. Course name
Mathematical Statistics 1
220. codeThe decision
2/coll1204.
221. the chapter /year
First semester/third stage/2024-2024
222. Date preparedDescription
10/9/2024
223. AAvailable attendance forms
My presence
224. Number of study hours (total) / Number of units (total)
3/3
225. Course Instructor Name(If more than one name is mentioned)
Name: M.M. Arshad Hamid Hassan Email: arshadhameed@uodiyala.edu.iq
226. Course objectives

Course objectives **- Introducing the student to the most important principles mathematical statisticsAnd its importance.** **- What do statistical distributions mean?** **- What are the steps of statistical analysis based on statistics?T athlete.** **- What are the display methods?Data.** **- Developing the inference method.**	**Course objectives**
227.	
Course outcomes, teaching, learning and assessment methods **theCognitive objectives** **1-The student should know the statistical information.** **2-The student should know the most important basics of science.StatisticsThe athlete.** **3-The student should know the most important statistical distributions.** **4-The student should know the method of presenting and analyzing data and what are the most important statistical distributions that are appropriate.** **5-The student should know the method of analysis and inference.** **Skill objectiveshCourse specific** **48- Interactive skills/student interaction with the**	**Strategy**

environment.

49- Personal skills / ability to diagnose statistical information and its distributions from reality.

50- Analytical skills / ability to analyze digital information realistically.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

51- Self-assessment

52- Tests (daily, monthly, quarterly, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- PresentationAnd.

Evaluation methods

-Various tests(Daily, monthly, quarterly, final

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply

mathematical concepts in different fields. **3- Developing the student's ability to deal with the Internet..**	

228. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral/enrichment	Lecture and discussion	definition of probability	definition of probability	3	1
Self-assessment/tests/oral/enrichment	Lecture and discussion	Bernoulli, binomial, trinomial	Bernoulli, binomial, trinomial	3	2
Self-assessment/tests/oral/enrichment	Lecture and discussion	Geometric	Geometric	3	3
Self-assessment/tests/oral/enrichment	Lecture and discussion	Gamma, exponential	Gamma, exponential	3	4
Self-assessment/tests/oral	Lecture and discussion	Normal distribution	Normal distribution	3	5
Self-assessment/tests/oral	Lecture and discussion	Pareto distribution	Pareto distribution	3	6
Self-assessment/tests/oral	Lecture and discussion	Weibull distribution	Weibull distribution	3	7
Self-assessment/tests/oral	Lecture and discussion/exam	Joint prob. distribution	Joint prob. Distribution	3	8
Self-assessment/tests/oral	Lecture and discussion	Conditional prob.	Conditional prob.	3	9
Self-assessment/tests/oral	Lecture and discussion	Some related	Some related	3	10
Self-assessment/tests/oral	Lecture and discussion	Marginal pdf order statistics	Marginal pdf order statistics	3	11
Self-assessment/tests/oral	Lecture and discussion	Joint pdf order statistics	Joint pdf order statistics	3	12
Self-assessment/tests/oral	Lecture and discussion	Sample median	Sample median	3	13
Self-assessment/tests/oral	Lecture and discussion	Sample range And mgf	Sample range And mgf	3	14

Self-assessment/tests/oral	clarificationQuestions	Exam	Exam	3	15

229.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

21- 60 marks written final exam.

20. 40 degrees of special endeavor divided into:

ص ص ص) 5 attendance marks.

ض ض ض) 5-10 marks homework with.

ططط) 15 marks written exam.

ظظظ) 5 marks oral exam.

230.Learning and teaching resources

Introduction to mathematical statistics /dr. iden hassan, dr. hamza Ismael	Required textbooks (methodology if any)
Introduction to mathematical statistics /dr. iden hassan, dr. hamza Ismael	Main references (sources)
thematical statistics /Robert Hogg	Recommended supporting books and references (scientific journals, reports…)
Iraqi Virtual Library/Extern Internet Research.	Electronic references, websites

Course Description Form

231. Course name
numerical analysis1
232. codeThe decision
233. the chapter /year
the chapterAcademicthe first/ Third phase / 2024 / 2024
234.
10/9/2024
235. AAvailable attendance forms
My presence
236. Number of study hours (total) / Number of units (total)
3/3
237. Course Instructor Name(If more than one name is mentioned)
Name: A.M.Dr. Sami Abdullah Abdel **Email:samiaabed@uodiyala.edu.iq**
238. Course objectives

• Introducing the student to how to arrive at mathemat concepts with approximate numerical solutions • The student learns how to deal with large numbers and how perform repetitive operations on them. For high accuracy • Introducing the student to how to apply numerical algorith with extreme precision	Course objectives

239. Teaching and learning strategies	
Course outcomes, teaching, learning and assessment methods **82- Cognitive objectives:- Making the student able to** **83- - To know the most important principles and basic concepts in mathematics.** **84- - To identify the types of functions and relationships on functions.** **85- To know the concept of derivative and derivative laws** **86- To express his opinion on mathematical concepts** **87- To apply mathematical concepts with real-life examples and case studies.**	**Strategy**

Course skill objectives

53- - Interactive skills: having the ability to communicate with the subject teacher and colleagues

54- -Diagnostic skills: the ability to diagnose functions and their real-world applications.

55- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

56- Self-assessment

57- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply mathematical concepts in different fields.

3- Developing the student's ability to deal with the Internet..

240. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Exam	recitati	Order of completion of operations The lineA - Absolute error -Relative error Rounded error	Accuracy in deali with Arithmetic operations	2	1
Exam	recitati	Sources of error -Method error -Initial error Cruciform error -The truncated error -Significant figures	Identify the types Error and its sources	2	2
Exam	recitati	rootEquations Methods for finding approximate roots -Drawing method	Understanding numerical solutic	2	3
Exam	recitati	Analysis method (deletion)	Understanding numerical solutic		4
Exam	recitati	Fixed point method	Understanding numerical solutic		5
Exam	recitati	Newton-Raphson method for finding roots	Understanding numerical solutic		6
Exam	recitati	Fake site method	Understanding numerical solutic		7
Exam	recitati	Special iterative methods	Building iterative methods		8
Exam	recitati	serialatForces	The benefit of series Forces		9

Exam	recitati	partial power series Power series approximation	The benefit of series Forces		10
Exam	recitati	Differences Definition of the difference equation - first difference and second difference	Knowing the concept of differences And its applicatio		11
Exam	recitati	Front differentials	Knowing the concept of differences And its applicatio		12
Exam	recitati	background differences	Knowing the concept of differences And its applicatio		13
Exam	recitati	Central differences	Knowing the concept of differences And its applicatio		14
Exam	recitati	The relationship between differences	Knowing the concept of differences And its applicatio		15

241. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

22- 60 marks written final exam.

21. 40 degrees of special endeavor divided into:

ععع) 5 attendance marks.

غغغ) 5-10 marks homework with.

فففف) 15 marks written exam.

قققق) 5 marks oral exam.

242. Learning and teaching resources

Numerical Analysis Book by I Faris Ahmed, Dr. Iqbal Mahmou Dr. Fadaa Mazhar	Required textbooks (methodology if any)
Introduction to Numeri Analysis, by Dr. Ahmed Al-Alusi, Adel Al-Bayati	Main references (sources)

Numerical Analysis **Richard L. Burden,** **J. Douglas Faires**	**Recommended supporting books and references (scientific journals, reports…)**
	Electronic references, websites

stage Third

(Second course)

Course Description Form

243. Course name
Data management using SPSS 2
244. codeThe decision
245. the chapter /year
Second semester/third stage/2024-2024
246. Date preparedDescription
10/9/2024
247. AAvailable attendance forms
My presence
248. Number of study hours (total) / Number of units (total)
3/3
249. Course Instructor Name(If more than one name is mentioned)
Name: A.M. Laith Talib Rashid Email: laith88@uodiyala.edu.iq
250. Course objectives

Course objectives	Course objectives
• Introducing the student to the theoretical foundations of the subject as well as its practical application. • It aims to build a design model that matches reality based on experience. • And characteristics that must be available in order to obtain the best design that simulates the practical reality of phenomena. • studied • Building statistical analysis skills and how to obtain an analysis of the phenomenon studied through • Knowing the factor affecting it.	

251.	
Course outcomes, teaching, learning and assessment methods Make the student able to: 88- Introducing the student to the most important windows in the programSPSS 89- Introducing the student to the importance of the programSPSS 90- Statement of the most important characteristics of the	Strategy

windowData view **91- Introducing the student to how to design a statistical questionnaire** **92- Providing the student with applications on data arrangement, variable transformation, data merging, and data partitioning.** **93- Providing students with applications on questionnaire analysis** **94- To know the program windowsSPSS.** **95- to knowFor the student to exploreData** **96- To guide the student to distinguish between the types of variables in the program.** **97- The student should know how to deal with data and how to test it according to the normal distribution.** **98- The student should be able to explain the results of hypothesis testing for quantitative and descriptive data.** **99- The student must complete homework on the homogeneity tests.** **Course skill objectives** **58- skillsInteractive:Have the ability to communicate with the subject teacherAnd colleagues.** **59- skillsDiagnostic:Ability to deal with the problemStatistics.** **60- skillsAnalytical:Ability to analyze and distinguish between different types of commandsAnalyticalIn the program** **Teaching and learning methods** **1-The lecture.** **2-DiscussionAnd dialogue.** **3-QuestionsEnrichment.** **61- interrogationLive.** **Evaluation methods** **7- True and false questions.** **8- Multiple choice questions.** **9- Clarification questions.** **10- Duties** **11- Self-assessment.** **12- Exams (monthly, semester, final).** **Emotional and value goals** **16- The ability to examine and evaluate the topics raised.** **17- The ability to criticize, distinguish and choose between the topics presented.** **18- The ability to produce new ideas** **Teaching and learning methods** **1- Brainstorming method**	

2- Use decision making to test the best alternative. **3- Presentation.** **Evaluation methods** **- Various tests (daily, monthly, semester, final)** **2-Oral tests** **3- Duties** **General and transferable skills (other skills related to employability and personal development).** **4- Skills to distinguish between types of variables.** **5- Training skills to conduct various statistical tests.** **6- Questionnaire preparation skills.**	

252. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence		Frequency tables, descriptive statistics	3	the first
Discussion, or and written examination	My presence		Intersection tables, pivot tables	3	the secon
Discussion, or and written examination	My presence		Charts, import and export data files	3	the third
Discussion, or and written examination	My presence		Average analysis, linear effect test	3	Fourth
Discussion, or and written examination	My presence		One sample t test, Independent sample t test	3	Fifth
Discussion, or and written examination	My presence		Paired sample t test, One way anova	3	Sixth
Discussion, or and written examination	My presence		Ch-square testv, kolmagorov-smirnov test	3	Seventh
Discussion, or and written examination	My presence		Binomial test, Runs test	3	The eight
Discussion, or and written examination	My presence		Two-sample independent samples testK	3	Ninth
Discussion, or and written examination	My presence		Test two related samples from related samplesK	3	tenth
Discussion, or and written examination	My presence		association, partial association	3	eleventh
Discussion, or and written examination	My presence		Simple linear regression, multiple linear regression	3	twelfth

Discussion, or and written examination	My presence		Methods for choosing the best model, the problem of multicollinearity	3	thirteentl
Discussion, or and written examination	My presence		Autocorrelation problem, heteroscedasticity problem	3	fourteent
Discussion, or and written examination	My presence		Second semester exam	3	fifteenth

253.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

23- 60 marks written final exam.

22. 40 degrees of special endeavor divided into:

ككك) 5 attendance marks.

لللل) 5 marks homework with.

ممم)15 marks first written exam

نننن) 15 marks for the second written exam

254.Learning and teaching resources

	Required textbooks (methodology if any)
Statistical program analysisSPSS Composition Dr. Ihab Abdel Salam Your guide to the statistical programSPSS Composition Saad Zaghloul	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
Nothing	Electronic references, websites

Course Description Form

255. Course name
Linear Regression Analysis 2
256. codeThe decision
257. the chapter /year
First semester/third stage/2024-2024

258. Date preparedDescription
10/9/2024
259. AAvailable attendance forms
My presence
260. Number of study hours (total) / Number of units (total)
3/3
261. Course Instructor Name(If more than one name is mentioned)
Name: A.M. Aqil Hamid Farhan Email:aqeelsta@uodiyala.edu.iq
262. Course objectives

Course objectives	Course objectives
• Introducing the student to the theoretical foundations of the subject as well as its practical application. • It aims to build a modeldeclineRealistic based onPractical reality • Features that must be available in order to get the bestLinear regression modelSimulates practical realityFor studies • studied • Building analytical skillsdeclineHow to get an analysis of the phenomenon studied through • Knowing the factor affecting it.	

263.	
Course outcomes, teaching, learning and assessment methods Make the student able to: 100- Understanding the basicsLinear regression analysis 101- to understandMultiple linear regression model 102- to understandBasics of using a regression model 103- to understandAssumptions of the regression model 104- Understanding the stages of building a regression model 105- Understanding the assumptions of the random error term 106- to understandModel parameter estimation processes 107- to understandOrdinary least squares method 108-to understandModel parameter testing methods Course skill objectives 62- Interactive skills: the ability to communicate with the subject teacher and colleagues. 63- Diagnostic skills: the ability to deal with the statistical problem. 64- Analytical skills: The ability to analyze and distinguish	Strategy

between different types of analytical commands in the program. **Teaching and learning methods** **1-Presenting basic theories, meaning that learning will begin with presenting basic theories and concepts.to decline** **2- Analysis decline And representedBy modelSimple, by buildingModel of the phenomenon studied.** **3- Use of studiesEconomicPractical applications and experiments in various fields, such as:** **4- Agricultural sciences and medical sciences, for the purpose of explaining how to useRegression modelIn practical life.** **5- Providing individual guidance to students to understand theories and practical exercises, and guiding them in solving problems and understanding results.** **6- Organizing group discussions aboutRegression model building processes, which contributes to the exchange of ideas and mutual learning among students.** **7- Previous studies can be used as examples to analyze and understand the results and statistical analyses used inMultiple linear regression model** **8- Providing continuous assessment of students' performance and providing feedback to guide them and improve their understanding and skills in analysis.** **Multiple linear regression** **Evaluation methods** **1-Clarification questions** **2- True or false questions** **3- Duties** **65- Self-assessment** **66- Tests (daily, monthly, semester, final)).** **Emotional and value goals** **19- The ability to examine and evaluate the topics raised.** **20- The ability to criticize, distinguish and choose between the topics presented.** **21- The ability to produce new ideas** **Teaching and learning methods** **1- Brainstorming method** **2- Use decision making to test the best alternative.** **3- Presentation.** **Evaluation methods** **- Various tests (daily, monthly, semester, final)** **2-Oral tests** **3- Duties** **General and transferable skills (other skills related to employability and personal development).**	

1- Skills in collecting and analyzing information about the concepts of designing and analyzing experiments and how to use them in agricultural fields. 2- Training and personal development skills on how to apply experimental design concepts in various fields. 3- Developing the student's ability to build a correct experiment.	

264. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presenc		The concept of multiple regression models	3	the first
Discussion, or and written examination	My presenc		The concept of multicollinearity	3	the secon
Discussion, or and written examination	My presenc		least squares method	3	the third
Discussion, or and written examination	My presenc		Linear correlation	3	Fourth
Discussion, or and written examination	My presenc		simple linear correlation	3	Fifth
Discussion, or and written examination	My presenc		partial correlation coefficient	3	Sixth
Discussion, or and written examination	My presenc		Multiple correlation coefficient	3	Seventh
Discussion, or and written examination	My presenc		Exercise/exam solutions	3	The eight
Discussion, or and written examination	My presenc		Rank-trait correlation coefficient	3	Ninth
Discussion, or and written examination	My presenc		Significance test of parameters	3	tenth
Discussion, or and written examination	My presenc		Confidence limits for landmarks	3	eleventh
Discussion, or and written examination	My presenc		Comparison between simple and multiple linear regression	3	twelfth
Discussion, or and written examination	My presenc		Significance tests of the parameters as a whole	3	thirteenth
Discussion, or and written	My presenc		Multiple nonlinear feature estimation	3	fourteent

examination			methods		
Discussion, or and written examination	My presenc		Second semester exan	3	fifteenth

265.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

24- 60 marks written final exam.

23. 40 degrees of special endeavor divided into:

٥٥٥) 5 attendance marks.

ووو) 5 marks homework with.

يييي) 15 marks first written exam

أأأأ) 15 marks for the second written exam

266.Learning and teaching resources

Regression analysis **Prof. Dr. Khashe' Al-Rawi**	**Required textbooks (methodology if any)**
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
nothing	**Electronic references, websites**

Course Description Form

267. Course name
Operation Research
268. codeThe decision
269. the chapter /year
First semester/third stage/2023-2024
270. Date preparedDescription
10/9/2024
271. AAvailable attendance forms
My presence
272. Number of study hours (total) / Number of units (total)
3/3
273. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Dr. Karim Qasim Muhammad **Email:ka1973reem@gmail.com**
274. Course objectives

Course objectives • **Introducing the student to the most important foundations and principles of operations research and quantitative decision-making.** • **Explaining the concept of programming mathematical problems** • **Highlighting the importance of mathematical concepts and solution methods using quantitative mathematics** • **This course aims to develop the ability to build models and write computer programs.**	**Course objectives Academic**

275.	
Course outcomes, teaching, learning and assessment methods **109- Cognitive objectives:- Making the student able to** **110- - To know the most important principles and basic concepts in quantitative programming and applied mathematics.** **111- - To identify the types of functions and relationships on functions.** **112- To learn programming tools and make the best decisions** **113- To express his opinion on the concepts of quantitative**	**Strategy**

mathematics and programming

114- To apply the concepts of applied mathematics with real-life examples and case studies.

Course skill objectives

67- - Interactive skills: having the ability to communicate with the subject teacher and colleagues

68- - Diagnostic skills: the ability to build programs and their real-world applications.

69- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

70- Self-assessment

71- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a logical, mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of

statistics and computers. **2- Training and personal development skills on how to apply programming mathematics concepts in various fields.** **3- Developing the student's ability to deal with the Internet..**	

276. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination and practical application	**My presence**	**Introduction to OR**	**Students must be Able to understand some concepts BasicIn programmin mathematics, operations research, programming and computersGive examples**	**3**	**the first**
Discussion, or and written examination and practical application	**My presence**	**Introduction to linear programming**	**Learn about lin mathematical mod linear programmi and operati research.**	**3**	**the second**
Discussion, or and written examination and practical application	**My presence**	**Method of solving linear programming**	**Methods for solv linear programs**	**3**	**the third**
Discussion, or and written examination and practical application	**My presence**	**Transportation**	**Learn about transportation mode and their economic applications.**	**3**	**Fourth**
Discussion, or and written examination and practical application	**My presence**	**Assignment problem**	**How to solve optima allocation problems**	**3**	**Fifth**
Discussion, or and written examination and practical application	**My presence**	**First exam**	**First test and evaluation**	**3**	**Sixth**
Discussion, or and written examination and practical application	**My presence**	**Testing of primal solution**	**Understand the concept of initial solution and optimal solution in transportation mode**	**3**	**Seventh**
Discussion an written test	**My presence**	**Stepping stone**	**How to test the ini solution for**	**3**	**The eighth**

and practical application			hopping transp models		
Discussion, or and written examination and practical application	My presence	Modified distribution	Use of the adjus distribution method testing	3	Ninth
Discussion, or and written examination and practical application	My presence	Practical examples	Practical examples	3	tenth
Discussion, or and written examination and practical application	My presence	Second exam	Second test a evaluation	3	eleventh
Discussion, or and written examination and practical application	My presence	Network analysis	Learn about netw analysis	3	twelfth
Discussion, or and written examination and practical application	My presence	PERT	Learn about Be style	3	thirteenth
Discussion, or and written examination and practical application	My presence	Reduce (time / cost)	How to redu completion times	3	fourteenth
Discussion an written test and practical application	My presence	Game theory.	The concept competition and theory of profit a loss	3	fifteenth
Editorial + Applied	My presence	Final exam	Level assessment	3	sixteenth

277.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

25- 60 marks written final exam.

24. 40 degrees of special endeavor divided into:

بببب) 5 attendance marks.

تتتت) 5-10 marks homework with.

ثثثث) 15 marks written exam.

جججج) 5 marks oral exam.

278.Learning and teaching resources	
Introduction to Operations Research	Required textbooks (methodology if any)
Gupta. Er. Prem Kumar, 2019 "Proplems in operations Research Principles and Solutions" Tribunals and Forums of New Delhi. India, ISBN: 978-81-219-0968-6.	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
Internet	Electronic references, websites

Course Description Form

279. Course name
Vital Statistics 2
280. codeThe decision
Bio statistics2
281. the chapter /year
Second Semester / Third Stage / 2024 - 2024
282. Date preparedDescription
10/9/2024
283. AAvailable attendance forms
My presence
284. Number of study hours (total) / Number of units (total)
2.5 hours theory vs. 2 hours practical
285. Course Instructor Name(If more than one name is mentioned)
Name: M.M. Amal Hadi Rashid Email: amal@uodiyala.edu.iq
286. Course objectives

Course objectives **5- Application to actual data/Assign students to read the topic in advance from several academic sources related to the course and lecture.** **6- After teaching the subject, the researcher will be able to assist researchers in various scientific applications.** **7- Being able to analyze data and draw conclusions that lead to sound decision making** **8- Students prepare brief reports on some of the course topics and discuss them in the lecture.** **3- Practical exercises on how to measure the levels of (theme) according to the available data and how to interpret the results** **4- How to use statistical software such asSPSS, MINTAB, SAS** **The student graduates with knowledge of this important applied material in all research fields.**	**Course objectives**

287.	
knowledge and understanding **- Ability to analyze data using statistical programs. Providing students with applied statistical knowledge in various areas of life, such as social, economic, and others.** **- The ability to familiarize the student with statistical tests and interest in studying cases in the health and agricultural fields and providing data for**	**Strategy**

application and extracting results.
- The student's understanding of the concept of analysis and benefiting from it in his future practical life.

Subject-specific skills

- Employment skills using appropriate statistical analysis of data. Through the theoretical aspect on real data.
- Skills to reach future decisions and make appropria decisions based on foundations scientifically sound

Teaching and learning methods

- Giving lectures and providing continuous and practical exercises on vari phenomena such as economic and demographic.
-
- And others to know the use of statistics in various fields
- Organize group discussions aboutAnalyze a specific time series, wh contributes to the exchange of ideas and mutual learning among students.

Evaluation methods

Periodic exams and discussions on the lecture topic

thinking skills

- Think and listen to the question.
- Understand the question.
- Focus on the requirements of the question.
- Accurate and scientific answer to the requirements the question

288. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
iscussion, oral and written examination	presence	Test of proportions and correlations	Test of proportions and correlations	2	the first
iscussion, oral and written examination	presence	Exercises on the kinship test	Exercises on the kinship test	2	the secor
iscussion, oral and written examination	presence	One or two sample signal test	One or two sample signal test	2	the third
iscussion, oral and written examination	presence	Exercises on the kinship test	Exercises on the kinship test	2	Fourth
iscussion, oral and written examination and practical	presence	Wilcoxon rank sum test	Wilcoxon rank sum test	2	Fifth

application					
)iscussion, oral and written examination	y presence	Wilcoxon rank sum test	Wilcoxon rank sum test	2	Sixth
)iscussion, oral and written examination	y presence	Chi-square test	Chi-square test	2	Seventh
)iscussion, oral and written examination	y presence	First exam	First exam	2	The eigh
)iscussion, oral and written examination	y presence	Tests on association	Tests on association	2	Ninth
)iscussion, oral and written examination	y presence	Exercises on the association test	Exercises on the association test	2	tenth
)iscussion, oral and written examination	y presence	Regression tests	Regression tests	2	eleventh
)iscussion, oral and written examination	y presence	Regression Testing Exercises	Regression Testing Exercises	2	twelfth
)iscussion, oral and written examination	y presence	Compatibility table test	Compatibility table test	2	thirteent
)iscussion, oral and written examination	y presence	Second exam	Second exam	2	fourteen
)iscussion, oral and written examination	y presence	Test of proportions and correlations	Vital applications	2	fifteenth

289.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

26- 50 marks for a final written exam and 10 marks for a final practical exam.

25. 40 degrees of special endeavor divided into:

כככ) 5 attendance marks.

כככ) 5-10 marks for homework with a practical exam.

ככ) 15 marks written exam.

ככ) 5 marks oral exam.

290.Learning and teaching resources

There are no books or methodological sources.	Required textbooks (methodology any)
Computer applications using softwareSPSS	Main references (sources)

Kamal Alwan Al-Mashhadani, Dr. Imad Hazem Abboudi **Dr. Suhail Najm Abdullah** **Department of Statistics, College of Administration and Economics, University of Baghdad / 2012** **Biostatistics using softwarespss** **Assistant Professor Dr. Jassim Mohammed Khalaf Al-Tamimi** **Professor Dr. Wissam Malik Daoud**	
Biostatistics A foundation for analysis in the health sciences	**Recommended supporting books and references (scientific journals, reports…)**
	Electronic references, websites

Course Description Form

291. Course name	
Mathematical Statistics 2	
292. codeThe decision	
2/coll1204.	
293. the chapter /year	
Second semester/third stage/2024-2024	
294. Date preparedDescription	
10/9/2024	
295. AAvailable attendance forms	
My presence	
296. Number of study hours (total) / Number of units (total)	
3/3	
297. Course Instructor Name(If more than one name is mentioned)	
Name: M.M. Arshad Hamid Hassan Email: arshadhameed@uodiyala.edu.iq	
298. Course objectives	
Course objectives **- Introducing the student to the most importantVocabularyMathemati statisticsThe order and its importance.** **-What do distributions mean?Composite statistic.** **What are the steps of statistical analysis based on statistics?Mathematical a estimation of distribution parameters.** **-Developing work on integrating mathematical statistical distributions** **- Knowledge of conditional mathematical statistics**	**Course objectives**
299.	
Course outcomes, teaching, learning and assessment methods **theCognitive objectives** **1-The student should know the informationStatisticsSports.** **2-The student should know the most important basics of science.StatisticsThe athlete.** **3-The student should know the most important statistical distributions.** **4-The student should know the method of presenting and analyzing data and what are the most important statistical distributions that are appropriate for the work environment.** **5-The student should know the method of analysis and**	**Strategy**

inference.

Skill objectiveshCourse specific

72- Interactive skills/student interaction with the environment.

73- Personal skills / ability to diagnose statistical information and its distributions from reality.

74- Analytical skills / ability to analyze digital information realistically.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

75- Self-assessment

76- Tests (daily, monthly, quarterly, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- PresentationAnd.

Evaluation methods

-Various tests(Daily, monthly, quarterly, final

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply mathematical concepts in different fields. **3- Developing the student's ability to deal with the Internet..**	

300. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral	Lecture and discussion	Distribution of order statistics	Distribution of order statistics	3	1
Self-assessment/tests/oral	Lecture and discussion	Distribution of order statistics	Distribution of order statistics	3	2
Self-assessment/tests/oral	Lecture and discussion	Sampling theory for finding distribution	Sampling theory for finding distribution	3	3
Self-assessment/tests/oral	Lecture and discussion	Transformation of variable of discrete	Transformation of variable of discrete	3	4
Self-assessment/tests/oral	Lecture and discussion	Transformation of variable of continuous	Transformation of variable of continuous	3	5
Self-assessment/tests/oral	Lecture and discussion	Extensions of change of variable technique	Extensions of change of variable technique	3	6
Self-assessment/tests/oral	Lecture and discussion	T distribution	T distribution	3	7
Self-assessment/tests/oral	Lecture and discussion/exam	T distribution	T distribution	3	8
Self-assessment/tests/oral	Lecture and discussion	F distribution	F distribution	3	9
Self-assessment/tests/oral	Lecture and discussion	F distribution	F distribution	3	10
Self-assessment/tests/oral	Lecture and discussion	Compound distribution like beta – binomial	Compound distribution like beta - binomial	3	11
Self-assessment/tests/oral	Lecture and discussion	Compound distribution like beta – binomial	Compound distribution like beta - binomial	3	12
Self-assessment/tests/oral	Lecture and discussion	Limiting moment – generating function	Limiting moment – generating function	3	13
Self-assessment/tests/oral	Lecture and discussion	Central limit theorem	Central limit theorem	3	14
Self-assessment/tests/oral	clarification Questions	Exam	Exam	3	15

301.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc. **27- 60 marks written final exam.** **26. 40 degrees of special endeavor divided into:** **rrrr) 5 attendance marks.** **zzzz) 5-10 marks homework with.** **ssss) 15 marks written exam.** **shshsh) 5 marks oral exam.**

302.Learning and teaching resources	
Introduction to mathematical statistics /dr. iden hassan, dr. hamza Ismael	**Required textbooks (methodology if any)**
Introduction to mathematical statistics /dr. iden hassan, dr. hamza Ismael	**Main references (sources)**
thematical statistics /Robert Hogg	**Recommended supporting books and references (scientific journals, reports…)**
Iraqi Virtual Library/Extern Internet Research.	**Electronic references, websites**

Course Description Form

303. Course name
Demographic Analysis 2
304. codeThe decision
305. the chapter /year
Second semester/third stage/2024-2024
306. Date preparedDescription
10/9/2024
307. AAvailable attendance forms
My presence
308. Number of study hours (total) / Number of units (total)
3/3
309. Course Instructor Name(If more than one name is mentioned)
Name: A.M. Wahab Salem Mohammed Email:wahabsalim72@gmail.cor
310. Course objectives

Course objectives	Course objectives Academic
• Introducing the student to the most important foundations and principles of economic statistics • Explaining the concept of economic statistics • Highlighting the importance of economic statistics in practice • This course aims to study the methods of economic statistics. The student should be able to classify, collect and descri data.	

311.

Course outcomes, teaching, learning and assessment methods	Strategy
115- Cognitive objectives:- Making the student able to 116- - To know the most important principles and basic concepts in demographic statistics. 117- - To determine the methods of demographic statistics. 118- To understand the concept of demographic statistics methods 119- To express his opinion on the concepts of demographic statistics 120- To apply survey concepts with real-life examples and case studies.	

Course skill objectives

77- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

78- - Diagnostic skills: the ability to diagnose problems and solve them.

79- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

80- Self-assessment

81- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about demographic statistics concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply appreciation concepts in different fields.

3- Developing the student's ability to deal with the Internet..	

312. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	Definition and objectives of statisticsDemographicand statisticsImmigration	Basic Concepts/Definitions of Migration	3	the first
Discussion, or and written examination	My presence	Migration rates and proportions	Migration rates and proportions	3	the secon
Discussion, or and written examination	My presence	Marriage and divorce rates	Marriage and divorce	3	the third
Discussion, or and written examination	My presence	Learn about the most important demographic surveys	learning	3	Fourth
Discussion, or and written examination	My presence	Learning on the workforce	Workforce	3	Fifth
Discussion, or and written examination	My presence	Labor force, working time, and labor productivity statistics	Industry	3	Sixth
Discussion, or and written examination	My presence	Definition and objectives of statisticsPopulation	miscarriage	3	Seventh
Discussion, or and written examination	My presence	TheLearn about the most important methods of population statistics.	The composition method	3	The eight
Discussion, or and written examination	My presence	theLearn about the most important ways to immigrate	Immigration routes	3	Ninth
Discussion, or and written examination	My presence	Imami migration	Imamate migration	3	tenth
Discussion, or and written examination	My presence	reverse migration	reverse migration	3	eleventh
Discussion, or and written examination	My presence	First month test of the first semestersecond	How to extend marriage	3	twelfth
Discussion, or and written examination	My presence	Sprague rates	Sprague rates	3	thirteentl
Discussion, or	My presence	General concepts	General concepts	3	fourteent

and written examination					
Discussion, or and written examination	My presence	Second semester exan	Exam exercises solution	3	fifteenth

313.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

28- 60 marks written final exam.

27. 40 degrees of special endeavor divided into:

ص(ص(ص 5 attendance marks.

ض(ض(ض 5-10 marks homework with.

ط(ط(ط 15 marks written exam.

ظ(ظ(ظ 5 marks oral exam.

314.Learning and teaching resources

bookPrinciples of Statistics Dr. Dhafer Hussein Rashid	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

315. Course name
Numerical Analysis 2
316. codeThe decision
317. the chapter /year
Second Semester / Third Stage / 2024-2024
318. Date preparedDescription
10/9/2024
319. AAvailable attendance forms
My presence
320. Number of study hours (total) / Number of units (total)
3/3
321. Course Instructor Name(If more than one name is mentioned)
Name: A.MDr. Sami Abdullah Abdel Email:samiaabed@uodiyala.edu.iq
322. Course objectives

• Introducing the student to how to arrive at mathemat concepts with approximate numerical solutions • The student learns how to deal with large numbers and how perform repetitive operations on them. For high accuracy • Introducing the student to how to apply numerical algorith with extreme precision	Course objectives

323. Teaching and learning strategies	
Course outcomes, teaching, learning and assessment methods 121- Cognitive objectives:- Making the student able to 122- - To know the most important principles and basic concepts in mathematics. 123- - To identify the types of functions and relationships on functions. 124- To know the concept of derivative and derivative laws 125- To express his opinion on mathematical concepts 126- To apply mathematical concepts with real-life examples and case studies.	Strategy

Course skill objectives

82- - Interactive skills: having the ability to communicate with the subject teacher and colleagues

83- -Diagnostic skills: the ability to diagnose functions and their real-world applications.

84- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

85- Self-assessment

86- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply mathematical concepts in different fields.

3- Developing the student's ability to deal with programs and the

Internet..	

324. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Exam	recitati	Forward-detached power series	Understandi variables Forces	2	1
Exam	recitati	Backward-return power series	Identify the types The forces of the loose	2	2
Exam	recitati	Central differences	Understanding central differences	2	3
Exam	recitati	Completion formulas Newton's forward formula	Knowing the ways complete	2	4
Exam	recitati	Newton's formula backward	Knowing the ways complete	2	5
Exam	recitati	- Divided differences	Knowing the ways complete	2	6
Exam	recitati	Newton's divisor	Knowing the ways complete	2	7
Exam	recitati	Chaos forward	Knowing the ways complete	2	8
Exam	recitati	Chaos back	Knowing the ways complete	2	9
Exam	recitati	Lagrange for different periods	The benefit of seri Forces	2	10
Exam	recitati	Numerical differentiation and numerical integration - Derivation of the numerical differential formula	Understanding Differential Calculu Numerical integration	2	11

Exam	recitati	theTComplete numerical Trapezoid	Understanding Differential Calculu Numerical integration	2	12
Exam	recitati	Simpson	Understanding Differential Calculu Numerical integration	2	13
Exam	recitati	Solving differential equations	Find the numerical solution for differential equations	2	14
Exam	recitati	Gauss-Jacobi -seidel	Numerical solution of systems Equations	2	15

325.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

29- 60 marks written final exam.

28. 40 degrees of special endeavor divided into:

عععع) 5 attendance marks.

غغغغ) 5-10 marks homework with.

فففف) 15 marks written exam.

قققق) 5 marks oral exam.

326.Learning and teaching resources

Numerical Analysis Book by I Faris Ahmed, Dr. Iqb Mahmoud, Dr. Fadaa Mazhar	Required textbooks (methodology if any)
Introduction to Numeric Analysis, by Dr. Ahmed Al-Alusi, Adel Al-Bayati	Main references (sources)
Numerical Analysis Richard L. Burden, J. Douglas Faires	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

stage Fourth

The coursethe first

ModelCourse Description

327. Course name	
Multivariate 1	
328. codeThe decision	
Mull 453	
329. the chapter /year	
First semester/fourth stage/2023-2024	
330. Date preparedDescription	
10/9/2024	
331. AAvailable attendance forms	
My presence	
332. Number of study hours (total) / Number of units (total)	
3/3	
333. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Aqil Hamid Farhan Email: aqeelsta@uodiyala.edu.iq	
334. Course objectives	
Course objectives **1- Student's knowledge of conceptsBasicOn dealing with matrices through phenomena and applied examples, and linking the subject of multiple variables with the subject of linear algebra, which the student studied over two semesters (the first on matrices and the second on linear algebra).** **2- Student's knowledge of concepts The basics of multivariate material, starting with one variable, two variables, or more, and linking the concepts of variables to the normal distribution with two or more variables, and benefiting from that by writing the normal distribution function for one or two variables.**	**Course objectives**
335.	
knowledge and understanding **- Ability to analyze data using statistical programs. Providing students with applied statistical knowledge in various areas of life, such as social, economic, and others.** **- The ability to familiarize the student with statistical tests and interest in studying cases in the health and agricultural fields and providing data for application and extracting results.** **- The student's understanding of the concept of analysis and benefiting from it in his future practical life.** **Subject-specific skills**	**Strategy**

- **Employment skills using appropriate statistical analysis of data. Through the theoretical aspect on real data.**
- **Skills to reach future decisions and make appropriate decisions based on foundations**
  scientifically sound

Teaching and learning methods

- **Giving lectures and providing continuous and practical exercises on various phenomena such as economic and demographic.**
- **And others to know the use of statistics in various fields**
- **Organize group discussions on the analysis of a specific time series, which contributes to the exchange of ideas and mutual learning among students.**

Evaluation methods

Periodic exams and discussions on the lecture topic

thinking skills

- **Think and listen to the question.**
- **Understand the question.**
- **Focus on the requirements of the question.**
- **Accurate and scientific answer to the requirements of the question**

336. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	The matrix, trace of matrix, identity matrix, the vector, matrix operation, type (diagonal, triangular, null, addition, multiplication)	The matrix, trace of matrix, identity matrix, the vector, matrix operation, type (diagonal, triangular, null, addition, multiplication)	3	1
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Distribution and association Laws for matrices, multiplication by diagonal matrix, linear equation	Distribution and association Laws for matrices, multiplication by diagonal matrix, linear equation	3	2
Self-assessment/tests/oral/enrichm	Lecture and	Vector operation	Vector operation (inner product,	3	3

entSolve examples in the section and take a daily exam And (homework)	**discussion**	**(inner product, leangth, norm, normalization, orthogonal, orthonormal, linear independent)**	**leangth, norm, normalization, orthogonal, orthonormal, linear independent)**		
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**The determination of square matrix, minor inverse matrix, rank of matrix, elementary row (column), generalized inverse matrix**	**The determination of square matrix, minor inverse matrix, rank of matrix, elementary row (column), generalized inverse matrix**	**3**	**4**
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Similar linear equation: (homogeneous system, non homogeneous system) of equation, orthogonal matrix properties of orthogonal matrix**	**Similar linear equation: (homogeneous system, non homogeneous system) of equation, orthogonal matrix properties of orthogonal matrix**	**3**	**5**
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Quadratic form: type of quadratic forms. Idempotent matrix, properties of Idempotent matrix**	**Quadratic form: type of quadratic forms. Idempotent matrix, properties of Idempotent matrix**	**3**	**6**
Self-	**Lecture**	**Characteristi**	**Characteristic**	**3**	**7**

assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**and discussion**	**c roots and vector of a matrix.**	**roots and vector of a matrix.**		
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Partition matrices, properties of partition, sum, product, determination and inverse of partition**	**Partition matrices, properties of partition, sum, product, determination and inverse of partition**	**3**	**8**
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Differentiation with vectors and matrices, hessian matrix, determination of maximum and minima**	**Differentiation with vectors and matrices, hessian matrix, determination of maximum and minima**	**3**	**9**
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Multivariate normal distribution, Multivariate joint distribution, absolute**	**Multivariate normal distribution, Multivariate joint distribution, absolute**	**3**	**10**
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Marginal and conditional distribution, independent partial correlation coefficient**	**Marginal and conditional distribution, independent partial correlation coefficient**	**3**	**11**
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Moment of multidimensional variables, variance, covariance, and correction**	**Moment of multidimensional variables, variance, covariance, and correction**	**3**	**12**
Self-assessment/tests/oral/enrichm	**Lecture and**	**Transformation of**	**Transformation of variables**	**3**	**13**

entSolve examples in the section and take a daily exam And (homework)	discussion	variables			
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Multivariate normal distribution: density standard form of normal density, conditional density of the multivariate normal distribution.	Multivariate normal distribution: density standard form of normal density, conditional density of the multivariate normal distribution.	3	14
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Properties of multiple normal distribution	Properties of multiple normal distribution	3	15

337. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

30- 50 marks for a final written exam and 10 marks for a final practical exam.

29.40 degrees of special endeavor divided into:

كككك) 5 attendance marks.

للل) 5-10 marks for homework with a practical exam.

مممم) 15 marks written exam.

نننن) 5 marks oral exam.

338. Learning and teaching resources

Multivariate Analysis Dr. Ziad Al-Rawi	**Required textbooks (methodology any)**
Raykov, T. & Marcoulides G.; (2008); "An Introduction to Applied Multivariate Analysis"; Routledge: Taylor & Francis Group; New-York	**Main references (sources)**
	Recommended supporting books and references (scientific journals, reports...)
	Electronic references, websites
-Data collection and analysis skills. 2-Skills of deduction and developing theoretical solutions. 3-Skills in dealing with data and its huge numberl data	**General skills andQualificationMovable(Skill sOther related to employability and development(Personal).**

Course Description Form

339. Course name
Statistical Inference 1
340. codeThe decision
coll1204.
341. the chapter /year
First semester/fourth stage/2024-2024
342. Date preparedDescription
10/9/2024
343. AAvailable attendance forms
My presence
344. Number of study hours (total) / Number of units (total)
3/3
345. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Prof. Dr. Enaam Abdul Rahman Noman Email: inaamsta@uodiyala.edu.
346. Course objectives

Course objectives	Course objectives
- Introducing the student to the most important principlesStatisti inference and its importance. - What do you meanStatistical estimates. - What are the steps of statistical analysis based on?Statisti estimates. - What are the methods?Statistical decision making. - Developing the inference method.	

347.	
Course outcomes, teaching, learning and assessment methods theCognitive objectives 1-The student should know the information about statistical estimates. 2-The student should know the most important basics of statistical inference. 3-The student should know the most important statistical hypothesis testing. 4-The student should know the method of presenting and analyzing data and the most important statistical estimation methods that suit the community being studied.	Strategy

5-The student should know the method of analysis and inference.

Skill objectiveshCourse specific

87- Interactive skills/student interaction with the environment.

88- Personal skills / ability to diagnose statistical information and its distributions from reality.

89- Analytical skills / ability to analyze digital information realistically.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

90- Self-assessment

91- Tests (daily, monthly, quarterly, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- PresentationAnd.

Evaluation methods

-Various tests(Daily, monthly, quarterly, final

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about

mathematical concepts and how to use them in the fields of statistics. **2- Training and personal development skills on how to apply mathematical concepts in different fields.** **3- Developing the student's ability to deal with the Internet..**	

348. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral/enrichment	Lecture and discussion	Introduction	Introduction	3	1
Self-assessment/tests/oral/enrichment	Lecture and discussion	point estimation	point estimation	3	2
Self-assessment/tests/oral/enrichment	Lecture and discussion	Unbiasedness mean square error	Unbiasedness mean square error	3	3
Self-assessment/tests/oral/enrichment	Lecture and discussion	Consistency	consistency	3	4
Self-assessment/tests/oral	Lecture and discussion	Sufficient estimation	Sufficient estimation	3	5
Self-assessment/tests/oral	Lecture and discussion	Exponential family	Exponential family	3	6
Self-assessment/tests/oral	Lecture and discussion	Rao-blackweet theorem	Rao-blackweet theorem	3	7
Self-assessment/tests/oral	Lecture and discussion/exam	Minimum variance a bound estimation	Minimum variance a bound estimation	3	8
Self-assessment/tests/oral	Lecture and discussion	Introduction to confidence interval	Introduction to confidence interval	3	9
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the mean	confidence interval for the mean	3	10
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the two means	confidence interval for the two means	3	11
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the variance	confidence interval for the variance	3	12
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the two variance	confidence interval for the two variance	3	13

Self-assessment/tests/oral	Lecture and discussion	Application	Application	3	14
Self-assessment/tests/oral	Lecture and discussion	Exam	Exam	3	15

349.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

31- 60 marks written final exam.

2- 40 degrees for seeking, divided into:

ههههه) 5 attendance marks.

وووو) 5-10 marks homework with.

يييي) 15 marks written exam.

ؤؤؤؤؤ)5 marks oral exam.

350.Learning and teaching resources

Statistical inference Prof. Dr. Abdul Majeed Hamza Al-Nasser Prof. Dr. Dhafer Hussein Rashid	**Required textbooks (methodology if any)**
Statistical inferenceProf. Dr. Abdul Majeed Hamza Al-Nasser Prof. Dr. Dhafer Hussein Rashid/Dr. Iden Hassan, Dr. Hamza Ismael	**Main references (sources)**
thematical statistics /Robert Hogg	**Recommended supporting books and references (scientific journals, reports…)**
Iraqi Virtual Library/Extern Internet Research.	**Electronic references, websites**

Course Description Form

351. Course name
Statistical Applications 1
352. codeThe decision
353. the chapter /year
First semester/fourth stage/2024-2024
354. Date preparedDescription
3/9/2024
355. AAvailable attendance forms
My presence
356. Number of study hours (total) / Number of units (total)
3/2
357. Course Instructor Name(If more than one name is mentioned)
Name: Assistant Professor Omar Adel Abdel-Wahab omersta@uodiyala.edu.iq
358. Course objectives

Course objectives	Course objectives
1- Student definitionBalApplications anostatistical 2- Providing the student with different top abouttheApplications anostatistical 3- Explain the importance of theApplicationsunlessStatistics	

359.	
1. A- Cognitive objectives A1- The student should know the most important principles and basic concepts of statistical applications. A2- The student should explain the statistical concepts in statistical applications. A3- The student should apply the concepts of statistical applications in theoretical and practical reality. A4- To be creative in using modern and contemporary concepts in statistical applications. A5- To express an opinion or issue a judgment on statistical concepts in statistical applications. B - Course specific skill objectives.	Strategy

B1-
Communication skills: - Possess a high level of skills in information technology, working with others (love of teamwork)
B2 - Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in statistical applications.

Teaching and learning methods

1- Using brainstorming Brain Storming.
2- Use of various mind maps.
3- Use problem solving method.
4- Using the presentation method Presentation

Evaluation methods

1- Objective questions Objective Test items are divided into:
A- True or false questions True/False Items
B - Multiple choice questions Multiple Choice Items
C- Interview questions Matching Items
2- homework Homework assignments
3- Self-assessment and peer assessment Peer and Self-Assessment
4- Tests are divided into:
A- Formative achievement tests accompanying teaching plans
B - Various final achievement tests:
1- Monthly final exams at the end of each academic month
2- Final exams at the end of each semester
3- Final exams at the end of the academic year.

360. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral and written examinatio	My presen	Definition of simulation, definition of programmingMatlab	Introducing the student to simulation and how to use the programMatlab	3	the first
Discussion, oral and written examinatio	My presen	Data generation by inverse method, data generation for continuous distributions	Explain how to generate data	3	the secon
Discussion,	My presen	Practical application	Practical application	3	the third

oral and written examinatio					
Discussion, oral and written examinatio	My presen	Generating distributions (exponential, uniform, gamma)	Explain how to generate data	3	Fourth
Discussion, oral and written examinatio	My presen	Generating data using the inverse method for discrete distributions	Explain how to generate data	3	Fifth
Discussion, oral and written examinatio	My presen	Generating distributions (Poisson, binomial, geometric)	Explain how to generate data	3	Sixth
Discussion, oral and written examinatio	My presen	Practical application	Practical application	3	Seventh
Discussion, oral and written examinatio	My presen	First monthly test for the second semester	----------	3	The eight
Discussion, oral and written examinatio	My presen	Generating a normal distribution using the Box-Miller method	Explain how to generate data	3	Ninth
Discussion, oral and written examinatio	My presen	Generating the dependent variable according to the linear regression model	Explain how to generate data	3	tenth
Discussion, oral and written examinatio	My presen	Practical application	Practical application	3	eleventh
Discussion, oral and written examinatio	My presen	Case Study Application: Hypothesis Testing	Introducing the student to how to use simulation in case studies	3	twelfth
Discussion, oral a written examinatio	My presen	Case Study Application: Analysis of Variance for One Criterion	Introducing the student to how to use simulation in case studies	3	thirteenth
Discussion, oral a	My presen	Practical application	Practical application	3	fourteent

written examinatio					
Discussion, oral a written examinatio	My presen	Second monthly test for the second semester	----------	3	fifteenth

361.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

32- 60 marks written final exam.

30. 40 degrees of special endeavor divided into:

بببببب) 10 attendance marks.

تتتتتت) 5 marks homework with.

ثثثثثث) 15 marks written exam.

ججججج) 10 marks oral exam.

362.Learning and teaching resources

	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

363. Course name
Time Series Analysis 1
364. codeThe decision
365. the chapter /year
First semester/fourth stage/2024-2024
366. Date preparedDescription
10/9/2024
367. AAvailable attendance forms
My presence
368. Number of study hours (total) / Number of units (total)
3/2.5
369. Course Instructor Name(If more than one name is mentioned)
Name: M. Hesham Faroun Abdel Latif Email: : hisham@uodiyala.edu.iq
370. Course objectives

Course objectives: In most areas of life, including industrial and economic, well as demographic and medical changes, we need statistical methods a techniques to analyze and process phenomena and also to predict the futu through them, as time series analysis is considered one of the most import statistical methods that can be combined with different fields, especially economic field, as it is used to determine the general trend of time series data well as cyclical and seasonal changes in addition to irregular and rand changes related to the occurrence of unexpected developments such as occurrence of natural or health disasters or wars and disturbances... Therefo this course aims to **Identify the most important basic components of a time series.** • **Method for estimating the basic components of time series a final models.** • **Statistical analysis of time series using statistical programs.** • **How to know the stationarity of the time series.** • **Methods of comparing models.** • **Internal and external forecasting based onFoundation year.**	**Course objectives**

371.	
knowledge and understanding **- Ability to analyze data using statistical programs.**	**Strategy**

Providing students with applied statistical knowledge in various areas of life, such as social, economic, and others.

- The student's ability to know how to estimate data, forecast and use it for planning purposes.
- The student's understanding of the concept of analysis and benefiting from it in his future practical life.

Subject-specific skills

- Employment skills using appropriate statistical analysis of data. Through the theoretical aspect on real data.
- Skills to reach future predictions and make appropria decisions based on foundations scientifically sound

Teaching and learning methods

- Giving lectures and providing continuous and practi exercises on various phenomena such as economi demographics, and others to learn how to use statist in various fields.
- Organize group discussions aboutAnalyze a speci time series, which contributes to the exchange of ide and mutual learning among students.

Evaluation methods

Periodic exams and discussions on the lecture topic

thinking skills

- Think and listen to the question.
- Understand the question.
- Focus on the requirements of the question.
- Accurate and scientific answer to the requirements the question

372. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion an Test Oral and written	My preser	The concept of time series, the concept of forecasting and its types	knowledge a understandi	3	the first
Discussion an Test Oral and written	My preser	- Data emergence patterns - Data types for time series	mental skills	3	the seco

Discussion an Test Oral and written	**My preser**	- **The most important metrics used in quantitative forecasting** - **General concepts of forecasting using time series**	**knowledge and understanding**	**3**	**the third**
Discussion an Test Oral and written	**My preser**	- **Accuracy of prediction methods** - **autocovariance function** - **autocorrelation function** - **Properties of the autocorrelation function** - **partial autocorrelation function** - **Sample autocorrelation function** - **Partial autocorrelation function of the sample**	**mental skills**	**3**	**Fourth**
Discussion an Test Oral and written and practical application	**My preser**	- **Case studies using statistical programs**	**knowledge and understanding**	**3**	**Fifth**
Discussion an Test Oral and written	**My preser**	- **Types of models in analysis methods** - **Time series analysis methods** **The cumulative model With practical application**	**mental skills**	**3**	**Sixth**
Discussion an Test Oral and written	**My preser**	**General direction vehicle and methods of finding it**	**knowledge and understanding**	**3**	**Seventh**
Discussion an Test Oral and written	**My preser**	**Season vehicle and ways to find it**	**mental skills**	**3**	**The eigh**
Discussion an Test Oral and written	**My preser**	- **cyclical and episodic changes** - **Finding the components of a time series** - **How to draw**	**knowledge and understanding**	**3**	**Ninth**

		- direction vehicle - semi-average method With practical application			
Discussion an Test Oral and written	My preser	- Case studies using statistical programs	mental skills	3	tenth
Discussion an Test Oral and written	My preser	- least squares method - Moving media method - Central moving media method	knowledge and understanding	3	eleventh
Discussion an Test Oral and written	My preser	Excluding the effect of the general trend	mental skills	3	twelfth
Discussion an Test Oral and written	My preser	- seasonal changes - Methods for calculating the seasonal index	knowledge and understanding	3	thirteen
Discussion an Test Oral and written	My preser	- Averages method - Method of proportion to moving media - Single exponential preamble - Practical application	mental skills	3	fourteen
Discussion an Test Oral and written	My preser	First semester exam	knowledge and understanding	3	fifteenth

373. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

33- 50 marks for a final written exam and 10 marks for a final practical exam.

31. 40 degrees of special endeavor divided into:

ححححح) 5 attendance marks.

خخخخخ) 5-10 marks for homework with a practical exam.

ددددد) 15 marks written exam.

ذذذذذ) 5 marks oral exam.

374. Learning and teaching resources

Time series 1 Time Series and Index authored by Dr. Abdul La Hassan Shoman and I Nizar Al-Sarraf	Required textbooks (methodology if any)

(2006) "Time William W.S. Wei Series Analysis: Univariate and Multivariate Methods" Addison-Wesley Pub.	**Main references (sources)**
James Douglas (1994) "Time Series Hamilton Analysis" Wiley.	**Recommended supporting books and references (scientific journals, reports…)**
	Electronic references, websites

Course Description Form

375. Course name
Statistical Inference 1
376. codeThe decision
coll1204.
377. the chapter /year
First semester/fourth stage/2024-2024
378. Date preparedDescription
10/9/2024
379. AAvailable attendance forms
My presence
380. Number of study hours (total) / Number of units (total)
3/3
381. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Prof. Dr. Enaam Abdul Rahman Noman Email: inaamsta@uodiyala.edu.
382. Course objectives

Course objectives	Course objectives
– Introducing the student to the most important principlesStatisti inference and its importance. – What do you meanStatistical estimates. – What are the steps of statistical analysis based on?Statisti estimates. – What are the methods?Statistical decision making. – Developing the inference method.	

383.

Course outcomes, teaching, learning and assessment methods	Strategy
theCognitive objectives 1-The student should know the information about statistical estimates. 2-The student should know the most important basics of statistical inference. 3-The student should know the most important statistical hypothesis testing. 4-The student should know the method of presenting and analyzing data and the most important statistical estimation methods that suit the community being studied. 5-The student should know the method of analysis and inference.	

Skill objectiveshCourse specific

92- Interactive skills/student interaction with the environment.

93- Personal skills / ability to diagnose statistical information and its distributions from reality.

94- Analytical skills / ability to analyze digital information realistically.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

95- Self-assessment

96- Tests (daily, monthly, quarterly, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- PresentationAnd.

Evaluation methods

-Various tests(Daily, monthly, quarterly, final

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply mathematical concepts in different fields. **3- Developing the student's ability to deal with the Internet..**

384. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral/enrichment	Lecture and discussion	Introduction	Introduction	3	1
Self-assessment/tests/oral/enrichment	Lecture and discussion	point estimation	point estimation	3	2
Self-assessment/tests/oral/enrichment	Lecture and discussion	Unbiasedness mean square error	Unbiasedness mean square error	3	3
Self-assessment/tests/oral/enrichment	Lecture and discussion	consistency	consistency	3	4
Self-assessment/tests/oral	Lecture and discussion	Sufficient estimation	Sufficient estimation	3	5
Self-assessment/tests/oral	Lecture and discussion	Exponential family	Exponential family	3	6
Self-assessment/tests/oral	Lecture and discussion	Rao-blackweet theorem	Rao-blackweet theorem	3	7
Self-assessment/tests/oral	Lecture and discussion/exam	Minimum variance a bound estimation	Minimum variance a bound estimation	3	8
Self-assessment/tests/oral	Lecture and discussion	Introduction to confidence interval	Introduction to confidence interval	3	9
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the mean	confidence interval for the mean	3	10
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the two means	confidence interval for the two means	3	11
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the variance	confidence interval for the variance	3	12
Self-assessment/tests/oral	Lecture and discussion	confidence interval for the two variance	confidence interval for the two variance	3	13
Self-assessment/t	Lecture and	Application	Application	3	14

ests/oral	discussion				
Self-assessment/tests/oral	Lecture and discussion	Exam	Exam	3	15

385.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

34- 60 marks written final exam.

2- 40 degrees for seeking, divided into:

ررررر) 5 attendance marks.

زززززز) 5-10 marks homework with.

سسسسسس) 15 marks written exam.

ششششش) 5 marks oral exam.

386.Learning and teaching resources

Statistical inference Prof. Dr. Abdul Majeed Hamza Al-Nasser Prof. Dr. Dhafer Hussein Rashid	**Required textbooks (methodology if any)**
Statistical inferenceProf. Dr. Abdul Majeed Hamza Al-Nasser Prof. Dr. Dhafer Hussein Rashid/Dr. Iden Hassan, Dr. Hamza Ismael	**Main references (sources)**
thematical statistics /Robert Hogg	**Recommended supporting books and references (scientific journals, reports…)**
Iraqi Virtual Library/Extern Internet Research.	**Electronic references, websites**

Course Description Form

387. Course name
Research methodology
388. codeThe decision
389. the chapter /year
First semester/first stage/2023-2024
390. Date preparedDescription
10/9/2024
391. AAvailable attendance forms
My presence
392. Number of study hours (total) / Number of units (total)
2 hours per week / 30 hours total
393. Course Instructor Name(If more than one name is mentioned)
Name: Assistant Professor, Research Methods and Eth Email:ad.luayabdullh@uodiyala.edu.iq
394. Course objectives

Course objectives	**Course objectives**
• **Introducing the student to the most important foundations and principles of the research methodology subject** • **Explaining the concept and basics of writing scientific research** • **Highlighting the importance of field and counterfield in research writing** • **This course aims to study how to write a graduation research for the student and how to write scientific research.**	

395.	
Course outcomes, teaching, learning and assessment methods **127- Cognitive objectives:- Making the student able to** **128- - To know the most important principles and basic concepts of scientific research.** **129- - To identify and define the types of research sources required.** **130- To learn the correct foundations of scientific research** **131- To express his opinion on writing scientific research** **132- To apply what he has studied by writing the required graduation research.**	**Strategy**

Course skill objectives

97- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

98- -Diagnostic skills: the ability to write a graduation research paper

99- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

100- Self-assessment

101- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills of collecting and analyzing information about scientific research methods and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply scientific research writing concepts in various fields.

3- Developing the student's ability to deal with the Internet..

396. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral and written examinatio	My presen	Introduction to cientific Research		2	the first
Discussion, oral and written examinatio	Introductio to Scienti Research	Introduction to cientific Research		3	the secon
Discussion, oral and written examinatio	My presen	Introduction to cientific Research		3	the third
Discussion, oral and written examinatio	My presen	Research ntroductions and resentation of its ntroductory pages		3	Fourth
Discussion, oral and written examinatio	My presen	Research ntroductions and resentation of its ntroductory pages		3	Fifth
Discussion, oral and written examinatio	My presen	Research ntroductions and resentation of its ntroductory pages		3	Sixth
Discussion, oral and written examinatio	My presen	Methodological framework of the research		3	Seventh
Discussion, oral and written examinatio	My presen	Methodological ramework of the research		3	The eight
Discussion, oral and written examinatio	My presen	Methodological ramework of the research		3	Ninth
Discussion, oral and written examinatio	My presen	The theoretical, analytical and concluding ramework of the research		3	tenth
Discussion, oral and	My presen	The theoretical, analytical and		3	eleventh

written examinatio		concluding ramework of the research			
Discussion, oral and written examinatio	My presen	The theoretical, analytical and concluding ramework of the research		3	twelfth
Discussion, oral a written examinatio	My presen	echnical aspects of writing scientific research		3	thirteentl
Discussion, oral a written examinatio	My presen	r technical aspects writing scientific research		3	fourteent
Discussion, oral a written examinatio	My presen	r technical aspects writing scientific research		3	fifteenth

397.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

35- 60 marks written final exam.

32. 40 degrees of special endeavor divided into:

ص) 5 attendance marks.

ض) 5-10 marks homework with.

ط) 15 marks written exam.

ظ) 5 marks oral exam.

398.Learning and teaching resources

	Required textbooks (methodology if any)
Book (Writing a Scientific Research Methodology)	Main references (sources)
External reports	Recommended supporting books and references (scientific journals, reports…)
Various websites	Electronic references, websites

Course Description Form

399. Course name	
Design and analysis of experiments$_1$	
400. codeThe decision	
401. the chapter /year	
First semester/fourth stage/2024-2024	
402. Date preparedDescription	
12/9/2024	
403. AAvailable attendance forms	
My presence	
404. Number of study hours (total) / Number of units (total)	
3/3	
405. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Wahab Salem Mohammed Email: Wahabsta@uodiyala.edu.iq	
406. Course objectives	
Course objectives • **Introducing the student to the theoretical foundations of the subject as well as its practical application.** • **It aims to build a design model that matches reality based on experience.** • **And characteristics that must be available in order to obtain the best design that simulates the practical reality of phenomena.** • **studied** • **Building statistical analysis skills and how to obtain an analysis of the phenomenon studied through** • **Knowing the factor affecting it.**	**Course objectives**
407.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:**	**Strategy**

133- Understand the basics of experimental design and analysis

134- Understand the complete design of the blind

135- Understanding Randomized Complete Block Design

136- Understanding the Latin Square Design

137- Understanding the design of the Latin-Greek square

138- Understanding the design of the Youden square

139- Understanding global experiences

140- Understanding the split pieces

141-Understanding Analysis of Covariance

Course skill objectives

102- Interactive skills: the ability to communicate with the subject teacher and colleagues.

103- Diagnostic skills: the ability to deal with the statistical problem.

104- Analytical skills: The ability to analyze and distinguish between different types of analytical commands in the program.

Teaching and learning methods

1-Presenting the basic theories, that is, the beginning of learning will be by presenting the basic theories and concepts of design.

2- AnalysisExperiments are represented by simple experiments, by building a design for the phenomenon.

3- Using case studies and practical applications of experiments in various fields, such as:

4- Agricultural sciences, medical sciences, physical and chemical sciences for the purpose of explaining how to use experimental design in practical life.

5- Providing individual guidance to students to understand theories and practical exercises, and guiding them in solving problems and understanding results.

6- Organizing group discussions on constructing, designing, and analyzing a specific experiment, which contributes to the exchange of ideas and mutual learning among students.

7- Previous studies can be used as examples to analyze and understand the results and statistical analyses used in
Design and analysis of simple experiments.

8- Providing continuous assessment of students' performance and providing feedback to guide them and improve their understanding and skills in analysis.

Simple experiments.

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

105- Self-assessment

106- Tests (daily, monthly, semester, final)).

Emotional and value goals

22- The ability to examine and evaluate the topics raised.

23- The ability to criticize, distinguish and choose between the topics presented.

24- The ability to produce new ideas

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about the concepts of designing and analyzing experiments and how to use them in agricultural fields.

2- Training and personal development skills on how to apply experimental design concepts in various fields.

3- Developing the student's ability to build a correct experiment.

408. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence		Concepts and terms in experimental design experience The worker Treatment Experimental piece or uni Randomization	3	the first
Discussion, or and written examination	My presence		repetition experimental error Design Good Experience Essentials Analysis of variance	3	the secon
Discussion, or and written examination	My presence		Simple experimental designs Fully integrated design Mathematical model Statistical analysis Experience (1) Contrast compounds Experience (2) Processor variance	3	the third

			homogeneity		
Discussion, or and written examination	My presence		Bartlett's test Cochran test Application (1) Application (2) Experience (3)	3	Fourth
Discussion, or and written examination	My presence		Experience (4) Completely randomized design with more than one observation of the experimental unit (plot) One Experience (5)	3	Fifth
Discussion, or and written examination	My presence		Tests Tests to be determined before the experiment Perpendicular intersections Example (1) Example (2) Example (3) Experience (6) Pickling trends Experience (7)	3	Sixth
Discussion, or and written examination	My presence		Tests suggested after trial Multiple comparison methods Methods that rely on calculating a single test value Least significant difference method Application (3) Healing method Application (4) Toki method Application (5) Methods that rely on calculating several test values Duncan's multi-range method Application (6) Student Niemann-Cohls Method Donut method Application (7)	3	Seventh
Discussion, or and written examination	My presence		Random complete sectors Design specifications Representing results (responses) with symbols	3	The eight

			Mathematical model Estimating model effects Statistical analysis Experience (8)		
Discussion, or and written examination	My presence		Missing values and methods of estimation Application (8) Standard errors Relative adequacy of randomized complete block design Application (9)	3	Ninth
Discussion, or and written examination	My presence		incomplete randomized block designs The idea of incomplete sector designs Balanced incomplete randomized block design Mathematical model of design Statistical analysis	3	tenth
Discussion, or and written examination	My presence		Building balanced imperfect section designs Experience (9)	3	eleventh
Discussion, or and written examination	My presence		Experience (10) Correction of processor averages Test the difference between the means of two corrected treatments	3	twelfth
Discussion, or and written examination	My presence		Latin square design Design specifications Mathematical model of design Statistical analysis	3	thirteenth
Discussion, or and written examination	My presence		Experience (11) Estimating missing values Application (10) Standard errors Experience (12) relative sufficiency Application (11)	3	fourteent
Discussion, or and written examination	My presence		First semester exam	3	fifteenth

409. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

36- 60 marks written final exam.

33. 40 degrees of special endeavor divided into:

عععع) 5 attendance marks. غغغغ) 5 marks homework with. فففف) 15 marks first written exam قققق) 15 marks for the second written exam

410.Learning and teaching resources	
Experimental Design and Analysis of Results (Part 1)(Part Two) Professor Kamal Alwan Khalaf Al-Mashhadani	Required textbooks (methodology if any)
Experimental Design and Analysis Howard J. Seltman July 11, 2018	Main references (sources)
International Journal of Experimental Design and Process Optimization Modern Experimental Design	Recommended supporting books and references (scientific journals, reports…)
nothing	Electronic references, websites

Course Description Form

411. Course name
Economic Measurement1
412. codeThe decision
413. the chapter /year
First semester/fourth stage/2024-2024
414. Date preparedDescription
10/9/2024
415. AAvailable attendance forms
My presence
416. Number of study hours (total) / Number of units (total)
3/3
417. Course Instructor Name(If more than one name is mentioned)
Name: M.M. Arshad Hamid Hassan Email: arshadhameed@uodiyala.edu.iq
418. Course objectives

Course objectives • **Introducing the student to the most important foundations and principles of the subject of economic measurement** • **Explaining the concept of estimation methods** • **Highlighting the importance of regression model estimation problems** • **This course aims to study the standard problems of estimating regression models.** **The student will be able to estimate regression models and the system simultaneous equations.**	**Course objectives**

419.

Course outcomes, teaching, learning and assessment methods **142- Cognitive objectives:- Making the student able to** **143- - To know the most important principles and basic concepts in economic measurement.** **144- - To determine the methods of assessment.** **145- To understand the concept of regression problems** **146- To express his opinion on the concepts of assessment methods**	**Strategy**

147- To apply the concepts of economic measurement with real-life examples and case studies.

Course skill objectives

107- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

108- - Diagnostic skills: the ability to diagnose problems and solve them.

109- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

110- Self-assessment

111- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about economic measurement concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply appreciation concepts in different fields. 3- Developing the student's ability to deal with the Internet..	

420. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	The nature of standard analysis	Definitions and concepts	3	the first
Discussion, or and written examination	My presence	Standard analysis functions	Foundations of standard analysis	3	the secon
Discussion, or and written examination	My presence	Linking internal and external variables	Understanding Relationships	3	the third
Discussion, or and written examination	My presence	Statistical and measurement indicators	Key concepts	3	Fourth
Discussion, or and written examination	My presence	Statement that the methodols is the best unbiased linear estimate.	Theoretical steps	3	Fifth
Discussion, or and written examination	My presence	Estimating the consumption function	Real-life applications	3	Sixth
Discussion, or and written examination	My presence	Simple linear regression analysis	Practical exercises	3	Seventh
Discussion, or and written examination	My presence	First month exam	monthly test	3	The eight
Discussion, or and written examination	My presence	A study of economic phenomena from the reality of the Iraqi economy	Practical exercises	3	Ninth
Discussion, or and written examination	My presence	Generalized Linear Regression Model	Key concepts	3	tenth
Discussion, or and written examination	My presence	Extracting statistical and quantitative indicators from regression analysis	Foundations of Standard Analysis	3	eleventh
Discussion, or and written examination	My presence	Statistical hypothesis	Key concepts	3	twelfth
Discussion, o and writt examination	My presence	Correlation and its relationship to the coefficient of determination	Understanding Relationships	3	thirteentl

Discussion, o and writt examination	My presence	statistical significance	Key concepts	3	fourteent
Discussion, o and writt examination	My presence	First semester exam		3	fifteenth

421.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

37- 60 marks written final exam.

34. 40 degrees of special endeavor divided into:

ككككك) 5 attendance marks.

للللل) 5-10 marks homework with.

ممممم) 15 marks written exam.

ننننن) 5 marks oral exam.

422.Learning and teaching resources

bookEconomic Measurement Dr. Amouri Hadi Kazim	Required textbooks (methodology if any)
The Economic Measurement Book by Dr. Amori Hadi Kazim	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

stage Fourth

The coursethe second

Course Description Form

423. Course name	
Multivariate 2	
424. codeThe decision	
Mull 453	
425. the chapter /year	
First semester/fourth stage/2024-2024	
426. Date preparedDescription	
10/9/2024	
427. AAvailable attendance forms	
My presence	
428. Number of study hours (total) / Number of units (total)	
3/3	
429. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Aqil Hamid Farhan Email: aqeelsta@uodiyala.edu.iq	
430. Course objectives	
Course objectives **1- Student's knowledge of conceptsBasicOn dealing with matrices through phenomena and applied examples, and linking the subject of multiple variables with the subject of linear algebra, which the student studied over two semesters (the first on matrices and the second on linear algebra).** **2- Student's knowledge of concepts The basics of multivariate material, starting with one variable, two variables, or more, and linking the concepts of variables to the normal distribution with two or more variables, and benefiting from that by writing the normal distribution function for one or two variables.**	**Course objectives**
431.	
knowledge and understanding **- Ability to analyze data using statistical programs.** **Providing students with applied statistical knowledge in various areas of life, such as social, economic, and others.** **- The ability to familiarize the student with statistical tests and interest in studying cases in the health and agricultural**	**Strategy**

fields and providing data for application and extracting results.

- The student's understanding of the concept of analysis and benefiting from it in his future practical life.

Subject-specific skills

- **Employment skills using appropriate statistical analysis of data. Through the theoretical aspect on real data.**
- **Skills to reach future decisions and make appropriate decisions based on foundations**
  scientifically sound

Teaching and learning methods

- **Giving lectures and providing continuous and practical exercises on various phenomena such as economic and demographic.**
- **And others to know the use of statistics in various fields**
- **Organize group discussions on the analysis of a specific time series, which contributes to the exchange of ideas and mutual learning among students.**

Evaluation methods

Periodic exams and discussions on the lecture topic

thinking skills

- **Think and listen to the question.**
- **Understand the question.**
- **Focus on the requirements of the question.**
- **Accurate and scientific answer to the requirements of the question**

432. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Tests of MVN concerning means	Knowing the basic concepts	3	1
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Case (A), Case (B) and Case (C)	Solve various questions	3	2
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Hotelling test	Knowing the test format	3	3
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Mahalanobis test	Knowing the test format	3	4

Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Test of Correlation	Know the correlation account	3	5
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	First exam		3	6
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Factor Analysis	Understanding the calculation method	3	7
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Discriminant Analysis	Knowledge of discriminant analysis	3	8
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Cluster Analysis	Knowledge of cluster analysis	3	9
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Canonical analysis	Understanding Legal Binding	3	10
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Second exam		3	11
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Profile Analysis	Knowing the criminal analysis account	3	12
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Special Topics	Applications	3	13
Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	Lecture and discussion	Special Topics	Applications	3	14

Self-assessment/tests/oral/enrichmentSolve examples in the section and take a daily exam And (homework)	**Lecture and discussion**	**Final exam**		**3**	**15**

433. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

38- 50 marks for a final written exam and 10 marks for a final practical exam.

35.40 degrees of special endeavor divided into:

ههههه) 5 attendance marks.

ووووو) 5-10 marks for homework with a practical exam.

ييييي) 15 marks written exam.

ففففف) 5 marks oral exam.

434. Learning and teaching resources

Multivariate Analysis Dr. Ziad Al-Rawi	**Required textbooks (methodology any)**
Raykov, T. & Marcoulides G.; (2008); "An Introduction to Applied Multivariate Analysis"; Routledge: Taylor & Francis Group; New-York	**Main references (sources)**
	Recommended supporting books and references (scientific journals, reports...)
	Electronic references, websites
-Data collection and analysis skills. 2-Skills of deduction and developing theoretical solutions. 3-Skills in dealing with data and its huge numberb data	**General skills andQualificationMovable(Skills Other related to employability and development(Personal).**

Course Description Form

435. Course name	
Design and analysis of experiments$_2$	
436. codeThe decision	
437. the chapter /year	
Second semester/fourth stage/2024-2024	
438. Date preparedDescription	
10/9/2024	
439. AAvailable attendance forms	
My presence	
440. Number of study hours (total) / Number of units (total)	
3/3	
441. Course Instructor Name(If more than one name is mentioned)	
Name: A.M. Wahab Salem Mohammed Email: Wahabsta@uodiyala.edu.iq	
442. Course objectives	
Course objectives • **Introducing the student to the theoretical foundations of the subject as well as its practical application.** • **It aims to build a design model that matches reality based on experience.** • **And characteristics that must be available in order to obtain the best design that simulates the practical reality of phenomena.** • **studied** • **Building statistical analysis skills and how to obtain an analysis of the phenomenon studied through** • **Knowing the factor affecting it.**	**Course objectives**
443.	
Course outcomes, teaching, learning and assessment methods **Make the student able to:** **148- Understand the basics of experimental design and analysis** **149- Understand the complete design of the blind**	**Strategy**

150- Understanding Randomized Complete Block Design
151- Understanding the Latin Square Design
152- Understanding the design of the Latin-Greek square
153- Understanding the design of the Youden square
154- Understanding global experiences
155- Understanding the split pieces
156-Understanding Analysis of Covariance

Course skill objectives

112- Interactive skills: the ability to communicate with the subject teacher and colleagues.
113- Diagnostic skills: the ability to deal with the statistical problem.
114- Analytical skills: the ability to analyze and distinguish between different types of orders.AnalyticalIn the program.

Teaching and learning methods

1-Presenting the basic theories, that is, the beginning of learning will be by presenting the basic theories and concepts of design.
2- AnalysisExperiments are represented by simple experiments, by building a design for the phenomenon.
3- Using case studies and practical applications of experiments in various fields, such as:
4- Agricultural sciences, medical sciences, physical and chemical sciences for the purpose of explaining how to use experimental design in practical life.
5- Providing individual guidance to students to understand theories and practical exercises, and guiding them in solving problems and understanding results.
6- Organizing group discussions on constructing, designing, and analyzing a specific experiment, which contributes to the exchange of ideas and mutual learning among students.
7- Previous studies can be used as examples to analyze and understand the results and statistical analyses used in
Design and analysis of simple experiments.
8- Providing continuous assessment of students' performance and providing feedback to guide them and improve their understanding and skills in analysis.
Simple experiments.

Evaluation methods

1-Clarification questions
2- True or false questions
3- Duties
115- Self-assessment
116- Tests (daily, monthly, semester, final)).

Emotional and value goals

25- The ability to examine and evaluate the topics raised.

26- The ability to criticize, distinguish and choose between the topics presented.
27- The ability to produce new ideas

Teaching and learning methods

1- Brainstorming method
2- Use decision making to test the best alternative.
3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)
2-Oral tests
3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about the concepts of designing and analyzing experiments and how to use them in agricultural fields.
2- Training and personal development skills on how to apply experimental design concepts in various fields.
3- Developing the student's ability to build a correct experiment.

444. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence		Greek Latin square design Mathematical model Experience (1) missing values Experience (2)	3	the first
Discussion, or and written examination	My presence		Yoden square design Mathematical model Statistical analysis Experience (2)	3	the secon
Discussion, or and written examination	My presence		The global experience Factorial experiment with completely randomized design Experience (3) Experience (4)	3	the third
Discussion, or and written examination	My presence		Experience (5) Factorial experiment with randomized complete block design Statistical analysis Experience (6)	3	Fourth
Discussion, or and written examination	My presence		Latin square factorial design Mathematical model Experience (7)	3	Fifth
Discussion, or	My presence		Integration	3	Sixth

and written examination			How to apply the idea of integration Types of integration Experience (8)		
Discussion, or and written examination	My presence		Experience (9) Integration methods for global experiences in four sectors The first method The second method	3	Seventh
Discussion, or and written examination	My presence		Partial replication of factorial experiments Partial repetition formation	3	The eight
Discussion, or and written examination	My presence		Partial replication with eight processors Experience (9)	3	Ninth
Discussion, or and written examination	My presence		split-piece experiments Split-plot experiments with completely randomized design Experience (10)	3	tenth
Discussion, or and written examination	My presence		Randomized complete block design split plot experiments Experience (11)	3	eleventh
Discussion, or and written examination	My presence		Latin square split-piece experiments Experience (12)	3	twelfth
Discussion, or and written examination	My presence		Analysis of covariance Linear model in analysis of covariance Analysis of covariance with a completely randomized design Experience (13)	3	thirteentl
Discussion, or and written examination	My presence		Analysis of covariance with randomized complete block design Experience (14) Analysis of covariance with Latin square design Experience (15)	3	fourteent
Discussion, or and written examination	My presence		Second semester exam	3	fifteenth

445.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

39- 60 marks written final exam.

36. 40 degrees of special endeavor divided into:

ببببببب) 5 attendance marks. تتتتتتت) 5 marks homework with. ثثثثثثث) 15 marks first written exam جججججج) 15 marks for the second written exam

446.Learning and teaching resources	
Experimental Design and Analysis of Results (Part 1)(Part Two) Professor Kamal Alwan Khalaf Al-Mashhadani	Required textbooks (methodology if any)
Experimental Design and Analysis Howard J. Seltman July 11, 2018	Main references (sources)
International Journal of Experimental Design and Process Optimization Modern Experimental Design	Recommended supporting books and references (scientific journals, reports…)
nothing	Electronic references, websites

Course Description Form

447. Course name	
Statistical Applications 2	
448. codeThe decision	
449. the chapter /year	
Second semester/fourth stage/2023-2024	
450. Date preparedDescription	
10/9/2024	
451. AAvailable attendance forms	
My presence	
452. Number of study hours (total) / Number of units (total)	
3/2	
453. Course Instructor Name(If more than one name is mentioned)	
Name: Assistant Professor Omar Adel Abdel-Wahab omersta@uodiyala.edu.iq	
454. Course objectives	
Course objectives **1- Student definitionBalApplications anostatistical** **2- Providing the student with different top abouttheApplications anostatistical** **3- Explain the importance of theApplicationsunlessStatistics**	**Course objectives**
455.	
1. A- Cognitive objectives **A1- The student should know the most important principles and basic concepts of statistical applications.** **A2- The student should explain the statistical concepts in statistical applications.** **A3- The student should apply the concepts of statistical applications in theoretical and practical reality.** **A4- To be creative in using modern and contemporary concepts in statistical applications.** **A5- To express an opinion or issue a judgment on statistical**	**Strategy**

concepts in statistical applications.
B - Course specific skill objectives.
B1-
Communication skills: - Possess a high level of skills in information technology, working with others (love of teamwork)
B2 - Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in statistical applications.

Teaching and learning methods
1- Using brainstorming Brain Storming.
2- Use of various mind maps.
3- Use problem solving method.
4- Using the presentation method Presentation

Evaluation methods
1- Objective questions Objective Test items are divided into:
A- True or false questions True/False Items
B - Multiple choice questions Multiple Choice Items
C- Interview questions Matching Items
2- homework Homework assignments
3- Self-assessment and peer assessment Peer and Self-Assessment
4- Tests are divided into:
A- Formative achievement tests accompanying teaching plans
B - Various final achievement tests:
1- Monthly final exams at the end of each academic month
2- Final exams at the end of each semester
3- Final exams at the end of the academic year.

456. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presenc	MATLAB Programming Basics	review	3	the first
Discussion, or and written examination	My presenc	Using MATLAB	introduction	3	the secon
Discussion, or and written examination	My presenc	Detecting outliers in data	Detect and estimate missing values	3	the third
Discussion, or and written examination	My presenc	Detecting outliers in data Estimation of missing data	Practical application	3	Fourth
Discussion, or and written examination	My presenc	a testChi-Square for goodness of fit	Tested	3	Fifth

Discussion, or and written examination	My presenc	a testChi-Square for goodness of fit	Practical application	3	Sixth
Discussion, or and written examination	My presenc	Drawing the fit of statistical distributions Graphing a simple linear regression equation	Data graphical representation	3	Seventh
Discussion, or and written examination	My presenc	First monthly test for the second semester	------------------------	3	The eight
Discussion, or and written examination	My presenc	Generating data with autocorrelation problem Testing for the presence of autocorrelation in the data	The problem of self-correlation	3	Ninth
Discussion, or and written examination	My presenc	Generating the problem of non-homogeneity of the variance of the random error terms Addressing the problem of non-homogeneity of the variance of random error terms	Error heterogeneity problem	3	tenth
Discussion, or and written examination	My presenc	The problem of self-correlation Error heterogeneity problem	Practical application	3	eleventh
Discussion, or and written examination	My presenc	Generating the problem of multicollinearity between explanatory variables Detecting multicollinearity in data	Multicollinearity problem	3	twelfth
Discussion, or and written examination	My presenc	Analyzing the questionnaire form through the programSPSS	Questionnaire analysis	3	thirteentl
Discussion, or and written examination	My presenc	Multicollinearity problem Questionnaire analysis	Practical application	3	fourteent
Discussion, or and written examination	My presenc	Second monthly test for the second semester	------------------------	3	fifteenth

457. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

40- 60 marks written final exam.

37. 40 degrees of special endeavor divided into:

ححححح) 10 attendance marks.

خخخخخخ) 5 marks homework with.

دددددد) 15 marks written exam.

ذذذذذذ) 10 marks oral exam.

458. Learning and teaching resources

	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

459. Course name
Econometrics 2
460. codeThe decision
461. the chapter /year
Second semester/fourth stage/2023-2024
462. Date preparedDescription
10/9/2024
463. AAvailable attendance forms
My presence
464. Number of study hours (total) / Number of units (total)
3/3
465. Course Instructor Name(If more than one name is mentioned)
Name: M.M. Arshad Hamid Hassan Email: arshadhameed@uodiyala.edu.iq
466. Course objectives

Course objectives • **Introducing the student to the most important foundations and principles of econometrics** • **Explaining the concept of statistics** • **Highlighting the importance of statistics in the application** • **This course aims to study statistical methods.** **The student should be able to classify, collect and descri data.**	**Course objectives**
467.	
Course outcomes, teaching, learning and assessment methods **157- Cognitive objectives:- Making the student able to** **158- - To know the most important principles and basic concepts in econometrics.** **159- - To determine the methods of statistics** **160- To know the concept of methodsEconometrics** **161- To express his opinion in conceptsEconometrics** **162- To apply survey concepts with real-life examples and case studies.**	**Strategy**

Course skill objectives

117- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

118- - Diagnostic skills: the ability to diagnose problems and solve them.

119- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

120- Self-assessment

121- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about economic measurement concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply appreciation concepts in different fields.

3- Developing the student's ability to deal with the Internet..

468. Course structure	

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	The nature of general linear regression analysis	Definitions and concepts	3	the first
Discussion, or and written examination	My presence	The problem of self-correlation	Key concepts	3	the secon
Discussion, or and written examination	My presence	The problem of self-correlation	Key concepts	3	the third
Discussion, or and written examination	My presence	The problem of self-correlation	General exercises	3	Fourth
Discussion, or and written examination	My presence	Statement that the methodols is the best unbiased linear estimate.	Theoretical steps	3	Fifth
Discussion, or and written examination	My presence	Estimating the production function	Real-life applications	3	Sixth
Discussion, or and written examination	My presence	Generalized Linear Regression Analysis	Practical exercises	3	Seventh
Discussion, or and written examination	My presence	First month exam	monthly test	3	The eight
Discussion, or and written examination	My presence	Multicollinearity problem	Key concepts	3	Ninth
Discussion, or and written examination	My presence	Multicollinearity problem	Key concepts	3	tenth
Discussion, or and written examination	My presence	Multicollinearity problem	General exercises	3	eleventh
Discussion, or and written examination	My presence	heterogeneity of variance	Key concepts	3	twelfth
Discussion, or and written examination	My presence	heterogeneity of variance	Key concepts	3	thirteentl
Discussion, or and written examination	My presence	heterogeneity of variance	General exercises	3	fourteent
Discussion, oral a written	My presenc	Second semester exam		3	fifteenth

examinatio					

469.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

41- 60 marks written final exam.

38. 40 degrees of special endeavor divided into:

rrrrrr) 5 attendance marks.

zzzzzz) 5-10 marks homework with.

sssssss) 15 marks written exam.

shshshshsh) 5 marks oral exam.

470.Learning and teaching resources

bookEconometrics Dr. Dhafer Hussein Rashid	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

471. Course name
Time Series Analysis 2
472. codeThe decision
473. the chapter /year
Second semester/fourth stage/2024-2024
474. Date preparedDescription
10/9/2024
475. AAvailable attendance forms
My presence
476. Number of study hours (total) / Number of units (total)
3/ 2.5
477. Course Instructor Name(If more than one name is mentioned)
Name: M. Hesham Faroun Abdel Latif Email: hisham@uodiyala.edu.iq
478. Course objectives

Course objectives: In most areas of life, including industrial and economic, well as demographic and medical changes, we need statistical methods a techniques to analyze and process phenomena and also to predict the fut through them, as time series analysis is considered one of the most import statistical methods that can be combined with different fields, especially economic field, as it is used to determine the general trend of time series d as well... Therefore, this course aims to Identify the most important basic components of a time series.Includ learning about statistical models such as autoregressive models and mov averages.ARIMARegular, seasonal and double,That is why this article aims • Identify the nature of stationary and non-stationary time series, skewn of the mean or variance Autocorrelation functions and methods for treating unstable series • Methods for diagnosing, estimating and testing seasonal and no seasonal Box-Jenkins models and the multiplier model. • Model fit testing for time series • Methods of comparing the models under study. • Internal and external forecasting based on optimal modelsTo be used economic and social planning, for statistical comparison purposes, and in ti	Course objectives

series analysis.	

479.

knowledge and understanding **- Ability to analyze data.** **Providing students with applied statistical knowledge in various areas of life, such as social, economic, and others.** **- The student's ability to know how to estimate data, forecast and use it for planning purposes.** **- The student's understanding of the concept of analysis and benefiting from it in his future practical life.** **Subject-specific skills** - **Employment skills using appropriate statistical analysis of data. Through the theoretical aspect on real data.** - **Skills to reach future predictions and ma appropriate decisions based on foundations scientifically sound** **Teaching and learning methods** - **Giving lectures and providing continuous and practi exercises on various phenomena such as economi physics, and others to learn how to use statistics various fields.** - **Organize group discussions aboutTime series analys which contributes to the exchange of ideas and mutu learning among students.** **Evaluation methods** **Periodic exams and discussions on the lecture topic** **thinking skills** - **Think and listen to the question.** - **Understand the question.** - **Focus on the requirements of the question.** - **Accurate and scientific answer to the requirements the question**	**Strategy**

480. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	Week
Discussion, oral and	My presen	- Double Exponential Boot -	knowledge and	3	the first

written examinatio		Brown's Method - Holt's method	understand		
Discussion, oral and written examinatio	My presen	- Triple exponential smoothing method (Winter's method) - Case studies using statistical programs, practical application	mental skills	3	the seco
Discussion, oral and written examinatio	My presen	Time series extrapolation - Stability in the arithmetic mean - - Stability in variance	knowledge and understanding	3	the thirc
Discussion, oral and written examinatio	My presen	Data transformations - autocorrelation function - partial autocorrelation function	mental skills	3	Fourth
Discussion, oral and written examinatio	My presen	- Box-Jenkins model analysis - Stochastic model (stable and unstable)	knowledge and understanding	3	Fifth
Discussion, oral and written examinatio	My presen	- Model building stages - Diagnosis - autoregressive model - Moving Averages Model - simple mixed model	mental skills	3	Sixth
Discussion, oral and written examinatio	My presen	- Using the autocorrelation function and the partial autocorrelation function in diagnosis - Methodological approaches to time series data analysis - autocorrelation coefficient - Autocorrelation coefficient test	knowledge and understanding	3	Seventh
Discussion, oral and written examinatio	My presen	- Box-Jenkins method for time series analysis - Model diagnosis	mental skills	3	The eigh

		- autoregressive model of degree P - Moving media model of degreeq - Autoregressive moving averages model of degree (p,q)			
Discussion, oral and written examinatio	My presen	Estimation using the method of moments and the maximum likelihood method	knowledge and understanding	3	Ninth
Discussion, oral and written examinatio	My presen	- Seasonal autoregressive model - Seasonal Moving Average Model Unstationary seasonal mixed model	mental skills	3	Tenth
Discussion, oral and written examinatio	My presen	- Model fit check - Price test - Legan Price Test	knowledge and understanding	3	eleventh
Discussion, oral and written examinatio	My presen	- multiplier seasonal model - Landmark Appreciation	mental skills	3	Twelfth
Discussion, oral and written examinatio	My presen	- Predicting models ARIMA	knowledge and understanding	3	thirteen
Discussion, oral and written examinatio	My presen	Case studies using statistical programs	mental skills	3	fourteen
Discussion, oral and written examinatio	My presen	Second semester exam	knowledge and understanding	3	fifteenth

481.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

42- 50 marks for a final written exam and 10 marks for a final practical exam.

39. 40 degrees of special endeavor divided into:

5 attendance marks.

5-10 marks for homework with a practical exam.

15 marks written exam.

5 marks oral exam.

482.Learning and teaching resources	
Time Series Analysis Part II Written by Dr. Manaf Yous Hamoud And Dr. Ahlam Ahmed Juma Dr. Firas Ahmed Mohamm	Required textbooks (methodology if any)
(2006) "Time William W.S. Wei Series Analysis: Univariate and Multivariate Methods" Addison-Wesley Pub.	Main references (sources)
(1994) James Douglas Hamilton "Time Series Analysis" Wiley.	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

483. Course name
Statistical Inference 2
484. codeThe decision
coll1204.
485. the chapter /year
First semester/fourth stage/2024-2024
486. Date preparedDescription
10/9/2024
487. AAvailable attendance forms
My presence
488. Number of study hours (total) / Number of units (total)
3/3
489. Course Instructor Name(If more than one name is mentioned)
Name: Asst. Prof. Dr. Enaam Abdul Rahman Noman Email: inaamsta@uodiyala.edu.
490. Course objectives

Course objectives	Course objectives
- Introducing the student to the most important principlesReason about statistical hypothesis testing and its importance. - What do you meanStatistical estimates. - What are the steps of statistical analysis based on?Statisti estimates. - What are the methods?Statistical decision making. - Developing the inference method.	
491.	
Course outcomes, teaching, learning and assessment methods theCognitive objectives 1-The student should know the information about statistical estimates. 2-The student should know the most important basics of statistical inference. 3-The student should know the most important statistical hypothesis testing. 4-The student should know the method of presenting and analyzing data and the most important statistical estimation methods that suit the community being	Strategy

studied.

5-The student should know the method of analysis and inference.

Skill objectiveshCourse specific

122- Interactive skills/student interaction with the environment.

123- Personal skills / ability to diagnose statistical information and its distributions from reality.

124- Analytical skills / ability to analyze digital information realistically.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

125- Self-assessment

126- Tests (daily, monthly, quarterly, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- PresentationAnd.

Evaluation methods

-Various tests(Daily, monthly, quarterly, final

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about mathematical concepts and how to use them in the fields of statistics. **2- Training and personal development skills on how to apply mathematical concepts in different fields.** **3- Developing the student's ability to deal with the Internet..**	

492. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Self-assessment/tests/oral	Lecture and discussion	Bayes estimation	Bayes estimation	3	1
Self-assessment/tests/oral	Lecture and discussion	Bayes testing application	Bayes testing application	3	2
Self-assessment/tests/oral	Lecture and discussion	Testing hypotheses	Testing hypotheses	3	3
Self-assessment/tests/oral	Lecture and discussion	Simple hypotheses	Simple hypotheses	3	4
Self-assessment/tests/oral	Lecture and discussion	Composite hypotheses	Composite hypotheses	3	5
Self-assessment/tests/oral	Lecture and discussion	Type of error	Type of error	3	6
Self-assessment/tests/oral	Lecture and discussion	Power function	Power function	3	7
Self-assessment/tests/oral	Lecture and discussion/exam	Best critical regression	Best critical regression	3	8
Self-assessment/tests/oral	Lecture and discussion	Generalized likelihood ratio	Generalized likelihood ratio	3	9
Self-assessment/tests/oral	Lecture and discussion	Generalized likelihood ratio	Generalized likelihood ratio	3	10
Self-assessment/tests/oral	Lecture and discussion	Uniformly most powerful test	Uniformly most powerful test	3	11
Self-assessment/tests/oral	Lecture and discussion	Sequential test of hypotheses	Sequential test of hypotheses	3	12
Self-assessment/tests/oral	Lecture and discussion	Application	Application	3	13
Self-assessment/tests/oral	Lecture and discussion	Application	Application	3	14
Self-	Lecture and	Exam	Exam	3	15

assessment/tests/oral	**discussion**				

Course Description Form

493. Course name	
Statistical Applications 2	
494. codeThe decision	
495. the chapter /year	
Second Semester/Fourth Stage/2024-2024	
496. Date preparedDescription	
10/9/2024	
497. AAvailable attendance forms	
My presence	
498. Number of study hours (total) / Number of units (total)	
3/2	
499. Course Instructor Name(If more than one name is mentioned)	
Name: Assistant Professor Omar Adel Abdel-Wahab omersta@uodiyala.edu.iq	
500. Course objectives	
Course objectives 1- Student definitionBalApplications anostatistical 2- Providing the student with different top abouttheApplications anostatistical 3- Explain the importance of theApplicationsunlessStatistics.	Course objectives
501.	
1. A- Cognitive objectives A1- The student should know the most important principles and basic concepts of statistical applications. A2- The student should explain the statistical concepts in statistical applications. A3- The student should apply the concepts of statistical applications in theoretical and practical reality. A4- To be creative in using modern and contemporary concepts in statistical applications. A5- To express an opinion or issue a judgment on statistical concepts in statistical applications. B - Course specific skill objectives.	Strategy

B1-
Communication skills: - Possess a high level of skills in information technology, working with others (love of teamwork)
B2 - Analytical skills: Skills to identify the relationship between mathematical and statistical concepts in statistical applications.

Teaching and learning methods
1- Using brainstorming Brain Storming.
2- Use of various mind maps.
3- Use problem solving method.
4- Using the presentation method Presentation

Evaluation methods
1- Objective questions Objective Test items are divided into:
A- True or false questions True/False Items
B - Multiple choice questions Multiple Choice Items
C- Interview questions Matching Items
2- homework Homework assignments
3- Self-assessment and peer assessment Peer and Self-Assessment
4- Tests are divided into:
A- Formative achievement tests accompanying teaching plans
B - Various final achievement tests:
1- Monthly final exams at the end of each academic month
2- Final exams at the end of each semester
3- Final exams at the end of the academic year.

502. Course structure

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, oral and written examination	My presen	MATLAB Programming Basics	review	3	the first
Discussion, oral and written examination	My presen	Using MATLAB	introduction	3	the secon
Discussion, oral and written examination	My presen	Detecting outliers in data	Detect and estimate missing values	3	the third
Discussion, oral and written examination	My presen	Detecting outliers in data Estimation of missing data	Practical application	3	Fourth
Discussion, oral and written examination	My presen	a testChi-Square for goodness of fit	Tested	3	Fifth
Discussion, oral and written	My presen	a testChi-Square for goodness of fit	Practical application	3	Sixth

examination					
Discussion, oral and written examination	My presen	Drawing the fit of statistical distributions Graphing a simple linear regression equation	Data graphical representation	3	Seventh
Discussion, oral and written examination	My presen	First monthly test for the second semester	----------	3	The eight
Discussion, oral and written examination	My presen	Generating data with autocorrelation problem Testing for the presence of autocorrelation in the data	The problem of self-correlation	3	Ninth
Discussion, oral and written examination	My presen	Generating the problem of non-homogeneity of the variance of the random error terms Addressing the problem of non-homogeneity of the variance of random error terms	Error heterogeneity problem	3	tenth
Discussion, oral and written examination	My presen	The problem of self-correlation Error heterogeneity problem	Practical application	3	eleventh
Discussion, oral and written examination	My presen	Generating the problem of multicollinearity between explanatory variables Detecting multicollinearity in data	Multicollinearity problem	3	twelfth
Discussion, oral and written examination	My presen	Analyzing the questionnaire form through the programSPSS	Questionnaire analysis	3	thirteenth
Discussion, oral and written examination	My presen	Multicollinearity problem Questionnaire analysis	Practical application	3	fourteent
Discussion, oral and written examination	My presen	Second monthly test for the second semester	----------	3	fifteenth

503. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

43- 60 marks written final exam.

40. 40 degrees of special endeavor divided into:

10 attendance marks.

5 marks homework with.

15 marks written exam.

10 marks oral exam

504.Learning and teaching resources	
	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites

Course Description Form

505. Course name	
Econometrics 2	
506. codeThe decision	
507. the chapter /year	
Second semester/fourth stage/2024-2024	
508. Date preparedDescription	
10/9/2024	
509. AAvailable attendance forms	
My presence	
510. Number of study hours (total) / Number of units (total)	
3/3	
511. Course Instructor Name(If more than one name is mentioned)	
Name: M.M. Arshad Hamid Hassan Email: arshadhameed@uodiyala.edu.iq	
512. Course objectives	
Course objectives • **Introducing the student to the most important foundations and principles of econometrics** • **Explaining the concept of statistics** • **Highlighting the importance of statistics in the application** • **This course aims to study statistical methods.** **The student should be able to classify, collect and descri data.**	**Course objectives**
513.	
Course outcomes, teaching, learning and assessment methods **163- Cognitive objectives:- Making the student able to** **164- - To know the most important principles and basic concepts in econometrics.** **165- - To determine the methods of statistics** **166- To know the concept of methodsEconometrics** **167- To express his opinion in conceptsEconometrics** **168- To apply survey concepts with real-life examples and case studies.** **Course skill objectives**	**Strategy**

127- - Interactive skills: the ability to communicate with the subject teacher and colleagues.

128- - Diagnostic skills: the ability to diagnose problems and solve them.

129- Scientific reports.

Teaching and learning methods

1- Managing the lecture in a practical manner related to the reality of daily life to attract the student to the subject of the lesson without straying from the core of the subject so that the material is flexible and capable of being understood and analyzed.

2-Discussion and dialogue

3- Enrichment questions

4- Direct interrogation

Evaluation methods

1-Clarification questions

2- True or false questions

3- Duties

130- Self-assessment

131- Tests (daily, monthly, semester, final)).

Emotional and value goals

1-Simple thinking: (analyzing the problem in a statistical and mathematical way and finding solutions based on the expected results)

2-Critical thinking: (the ability to criticize and distinguish between the topics presented and choose between them)

3-Creative thinking: (the ability to produce new ideas and methods of solution).

Teaching and learning methods

1- Brainstorming method

2- Use decision making to test the best alternative.

3- Presentation.

Evaluation methods

- Various tests (daily, monthly, semester, final)

2-Oral tests

3- Duties

General and transferable skills (other skills related to employability and personal development).

1- Skills in collecting and analyzing information about economic measurement concepts and how to use them in the fields of statistics.

2- Training and personal development skills on how to apply appreciation concepts in different fields.

3- Developing the student's ability to deal with the Internet..

514. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Discussion, or and written examination	My presence	The nature of general linear regression analysis	Definitions and concepts	3	the first
Discussion, or and written examination	My presence	The problem of self-correlation	Key concepts	3	the secon
Discussion, or and written examination	My presence	The problem of self-correlation	Key concepts	3	the third
Discussion, or and written examination	My presence	The problem of self-correlation	General exercises	3	Fourth
Discussion, or and written examination	My presence	Statement that the methodols is the best unbiased linear estimate.	Theoretical steps	3	Fifth
Discussion, or and written examination	My presence	Estimating the production function	Real-life applications	3	Sixth
Discussion, or and written examination	My presence	Generalized Linear Regression Analysis	Practical exercises	3	Seventh
Discussion, or and written examination	My presence	First month exam	monthly test	3	The eight
Discussion, or and written examination	My presence	Multicollinearity problem	Key concepts	3	Ninth
Discussion, or and written examination	My presence	Multicollinearity problem	Key concepts	3	tenth
Discussion, or and written examination	My presence	Multicollinearity problem	General exercises	3	eleventh
Discussion, or and written examination	My presence	heterogeneity of variance	Key concepts	3	twelfth
Discussion, or and written examination	My presence	heterogeneity of variance	Key concepts	3	thirteenth
Discussion, or and written examination	My presence	heterogeneity of variance	General exercises	3	fourteent
Discussion, oral a written examinatio	My presen	Second semester exam		3	fifteenth

515.Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

44- 60 marks written final exam.

41. 40 degrees of special endeavor divided into:

5 attendance marks.

5-10 marks homework with.

15 marks written exam.

5 marks oral exam.

516.Learning and teaching resources

bookEconometrics Dr. Dhafer Hussein Rashid	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports…)
	Electronic references, websites