

**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

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They 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 (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are

followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: ...Basrah.....

Faculty/Institute: Administration and Economics.....

Scientific Department: .. Statistics.....

Academic or Professional Program Name: Numerical analysis2.....

Final Certificate Name: Statistics.....

Academic System:semester.....

Description Preparation Date: 27/2/2024

File Completion Date: 27/2/2024

Signature:

Head of Department Name:

**Assistant Professor Dr. Bahaa
Abdel Razzaq**

Date:

Signature:

Scientific Associate Name:

**Assistant Professor Dr.
Ammar Youssef Dajar**

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

1. Program Vision

The College of Administration and Economics seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving society in its various fields.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in statistics and to develop the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, and emphasizing social and cultural values and responding to the requirements of the local market..

3. Program Objectives

1. Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.
2. Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations.
3. Spreading the culture of human diversity in society, transferring knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities
4. The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges

to achieve best practices in the fields of teaching, learning and translation.

5. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6. Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of languages, literature and translation.

Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment..

4. Program Accreditation

nothing?

5. Other external influences

nothing

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements	45	3		basic
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023–2024 The third stage		Numerical analysis2	theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Informing students about the importance of appropriate numerical methods for solving differential equations. Increasing students' knowledge in forming equations using forward and backward differences
Skills	
Learning Outcomes 2	Expanding students' skills in solving integrals numerically
Ethics	
Learning Outcomes 4	Developing students' abilities to use a calculator to solve differential equations numerically

9. Teaching and Learning Strategies

- 1– The lecture.
 - 2– Discussion and dialogue.
 - 3– Enrichment questions.
- Direct interrogation

10. Evaluation methods

- 1 – Various tests (daily, monthly, final)
- 2 – Oral exams.
- 3– Duties

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
	mathematics	Applied statistics			✓	

Professional Development

Mentoring new faculty members

Professional development of faculty members

Introducing the electronic calculator to solve differential equations numerically

12. Acceptance Criterion

Central admission

13. The most important sources of information about the program

- 1- Introduction to numerical analysis. Dr.. Kazem Muhammad Al-Lami
- 2- Introduction to numerical analysis.Dr. Abdul Samad student

14. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Third stage		Numerical analysis2	basic	✓				✓				✓			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:	
Numerical Analysis2	
2. Course Code:	
3. Semester / Year:	
semester	
4. Description Preparation Date:	
27/2/2024	
5. Available Attendance Forms:	
attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45/ 3 hours a week	
7. Course administrator's name (mention all, if more than one name)	
Name: Wafaa Abdulsamad Ashour Email: wafaa.ashoor@uobasrah.edu.iq	
8. Course Objectives	
-Recognize several types of differences 2-Use differences to solve and model model data 3-Finding the derivative using numerical methods 4- Finding the definite integral using numerical methods	<ul style="list-style-type: none"> • • •
9. Teaching and Learning Strategies	
Strategy	1- Brainstorming education strategy. -2- Education Strategy Notes Series
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	1- Providing students with the skill solving differential equations numerically 2- Introducing students the format of polynomials using forward and backward differences Informing students about finding integrals numerically	Interpolation	Explaining the scientific material during lectures and giving assignments to students to practice solving them. 2- Involving students during the lecture. Developing calculator skills solve equations and integrals	
2			Linear interpolation		
3			Lagrange's formula for interpolation		
4			the differences		
5			Forward differences		
6			Central differences		
7			backward differences		
8			Newton's forward formula		
9			Newton's backward formula		
10			numerical integration		
11			trapezoidal method		
12			Simpsons formula		
13			Solve differential equations numerically		
14			Euler's formula		
15			Runge-Kutta method of the second order		
		Runge-Kutta method of the fourth order			

11. Course Evaluation

The score is divided into 40 for the monthly exam, 10 for student activity and attendance, then 50 for the final exam

12. Learning and Teaching Resources

[1] Book of Numerical Analysis / Dr. Kazem Al-Lami

[2] printed lectures

Recommended books and references (scientific journals, reports...)

Internet

Electronic References, Websites

Numerical Analysis / Schaum Series

