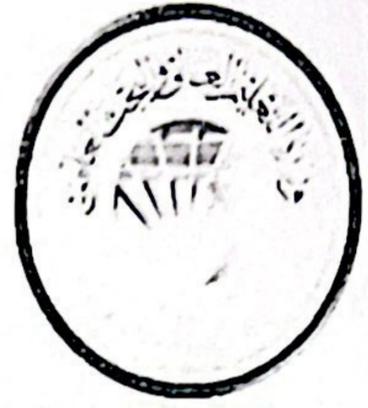


Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department



Academic Program and Course Description Guide

2025

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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: *Middle Technical university*
Faculty/Institute: *Electrical Engineering Technical college*
Scientific Department: *Computer Engineering Technique*
Academic or Professional Program Name:
Final Certificate Name: *Engineering Technical*
Academic System: *...years*
Description Preparation Date: *19/10/2024*
File Completion Date: *19/10/2024*

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. program vision

Increase in engineering sciences and their applications, transfer technology for the benefit of the local and global community, and provide educational programs and technical services based on the spirit of competition and communication with the outside world.

2 Program mission

The department seeks to select competent professors who in turn are keen to choose the best scientific, popular, easy and modern methods to deliver scientific materials to students. As for the other important aspect, which is the scientific aspect, the department is keen to choose engineering workshops and modern scientific laboratories to support the theoretical aspect of the student and provide the student with scientific experience and develop their skills in this field.

3. program objectives

- 1- The graduate acquires the ability to contribute effectively to serving the community and solving specialized industrial problems to advance the country's economic reality.
2. Preparing graduates who are familiar with applied industrial experiences by introducing modern technological means into the department's curricula.
3. Qualifying students to be technical engineers who have the ability to prepare initial designs for electronic and electrical circuits of various types, especially those related to computer and communications technology engineering.

4. program accreditation

Middle Technical University

5. other external influence's

NONE

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	7	14	10%	
College Requirements	7	14	10%	
Department Requirements	40	200	90%	
Summer Training				
Other				

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

7. Program Description

12. Awards and Credits	11. Program Structure			
	Credit rating	Course or Module Title		Level/Year
Bachelor Degree Requires (x) credits	4	Democracy and Human Rights	1	First Year
	4	Mathematics (I)	2	
	3	Engineering Drawing	3	
	4	Workshops	4	
	7	Electrical Engineering Fundamentals	5	
	6	Computer Organization	6	
	7	Computer Programming (I)	7	
	6	Digital Electronics	8	
	4	Computer Applications	1	Second Year
	4	Mathematics (II)	2	
	7	Microprocessor Architecture	3	
	6	Instrumentation and Measurements	4	
	6	Computer Programming (II)	5	
	6	Communication Fundamentals	6	
	6	Electronics	7	
	-	Training	8	
	4	Electronic Systems Simulators	1	3 rd year Computer Electronic
	6	Engineering Analysis	2	
	6	Control Engineering Fundamentals	3	
	6	Power Electronics	4	
	6	Real Time Systems Design	5	
	6	Digital Signal Processing	6	
	6	Digital Controllers	7	
	6	Elective Course	8	
	-	Training	9	
	6	Smart Systems Modeling	1	4 th year Computer Electronic
6	Advanced Computer Technology	2		
6	Computer Interface Circuits Design	3		
6	Advanced Digital Electronics	4		
6	Project Management	5		
6	Computer Networks	6		
6	Elective Course	7		
4	Project	8		

	4	Computer Networks Simulators	1	3 rd Year Computer Communication Network
	6	Engineering Analysis	2	
	6	Control Engineering Fundamentals	3	
	6	Computer Networks Fundamentals	4	
	6	Real Time Systems Design	5	
	6	Digital Signal Processing	6	
	6	Digital Communications	7	
	6	Elective Course	8	
		Training	9	
	6	Computer Networks Protocols	1	4 th Year Computer Communication Network
	6	Information Theory and Coding	2	
	6	Mobile Communications	3	
	6	Security of Computer and Networks	4	
	6	Project Management	5	
	6	Multimedia Computing	6	
	6	Elective course	7	
	4	Project	8	

9. Personal Development Planning

Academic program accredited how my information essential to the student and skill provides can work on the same continuously develop and is also keen teaching staff on the estimated self-development of the student by urging students to look for problems within their field and then work to resolve this process and be under the supervision and follow up the teaching staff to provide advice and guidance sponsor planting right foundations for the process of personal development.

10. Admission criteria.

Admission criteria are determined annually by the specialized committees in the Ministry of Higher Education and Scientific Research, where inputs are accepting students as follows:

- 1- Graduates of the scientific branch and at a rate of at least 80%
- 2- Graduates of Preparatory School industrial and 5% of the country's top graduates and the following disciplines:
 - A- specialty of Computer Maintenance
 - B- allocate Communications
 - C- specialty computer networks
 - D specialty assembly and maintenance of computer
- 3- Graduates of technical institutes

10. Key sources of information about the program

1. Specialized scientific books
2. Academic research
3. Internet informatics
4. Accumulated scientific expertise of the staff section
5. Nutrition feedback from the labor market

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (If applicable)	Number of the teaching staff	
	General	Special		Staff	Lecturer
Profesor. Dr		eng Electronic eng. network Eng. Electr		2	
Ass. prof. Dr	3	3		3	3
Ass. Letural	3	3		1	2
Lectural	3	3		24	8

Professional development

Continuous improvement is a focus on students and is done every day as a natural part of our profession. We always strive to improve processes that increase the level of achievement of the department and college goals and a periodic study is conducted to study the areas of weakness or deficiency in order to overcome or overcome them. We ask every teacher to work on continuous improvement of student performance and to write down the problems and obstacles facing students or the educational process within his/her specialization in his/her workplace in an attempt to ensure quality

Professional development for faculty members

- Familiarizing the new faculty member with the university, its development vision, its plan towards globalization, and its development programs.
- Helping the new faculty member adapt practically and psychologically and reducing the anxiety that may hinder his participation and integration in university work and activities.
- Informing the faculty member of the role played by the University of Peace College and his responsibilities towards that.
- Familiarizing the faculty member with the professional development programs at the university to have an active role in them.
- Providing the opportunity for the new faculty member to build a network of relationships and communicate with his peers from other departments and colleges.
- Familiarizing the new faculty member with his rights and duties.
- Introducing the scientific research programs at the university to enable him to contribute to the research processes therein.
- Identifying the services provided by the university to its members so that he can benefit from them.
- Identifying the sources of knowledge and electronic information available to the faculty member at the university and providing him with Internet and database search skills.
- Developing the skills of the faculty member in teaching, learning, and managing the educational process.

12. Acceptance Criteria

Admission criteria are determined annually by specialized committees in the Ministry of Higher Education and Scientific Research, where the student admission inputs are as follows: -1 Graduates of the scientific branch with a rate of not less than 80%

2- Graduates of industrial preparatory schools and 5% of the top students in the country and graduates of the following specializations:

- A- Computer maintenance specialization
- B- B- Communications specialization
- C- C- Computer networks specialization
- C- Computer assembly and maintenance specialization

3- Graduates of technical institutes

13. The most important sources of information about the program.

- A- Department page on the college website.
- B- Computer Engineering Technology Department Guide.
- C- Electrical Engineering Technology College Guide.
- D- Some meetings of the Ministry's committees for the *Computer Engineering Technology* Department.

14. Program development plan

1. Developing the field of education and raising the capabilities of teachers
2. Developing the field of scientific aspects and scientific research
3. Developing the field of innovation
4. Developing the field of building relationships and exchanging experiences
5. Innovation (scientific materials and new methodological additions)



Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	10/10	Introduction to Digital Communication	Of Signal type	
2	17/10	Signal Types, General Block Diagram of Digital Communication	General block diagram of digital communication	
3	24/10	Advantage and Disadvantage of Digital Modulation	Of Summation of two signals	
4	31/10	Line Coding, Unit Impulse Signal	Of Unit Impulse signal	
5	7/11	Fourier Transform	Of Fourier Transform	
6	14/11	Fourier Transform	Of Time Division Multiplexer(TDM)	
7	21/11	Sampling theorem, Pulse Modulation	Of Time Division Multiplexer(TDM)	
8	28/11	Multiplexing, Time Division Multiplexing (TDM), Frequency Division Multiplexing (FDM),	Of Pulse Amplitude Modulation(PAM)	
9	5/12	Pulse Amplitude Modulation (PAM), Pulse Width Modulation (PWM)	Of Pulse Width Modulation(PWM)	
10	12/12	Pulse Position Modulation (PPM), Pulse Code Modulation (PCM)	Of Pulse Width Modulation(PWM)	
11	19/12	Noise Consideration in PCM, Limitation and Modifications of PCM	Of Pulse Position Modulation(PPM)	
12	26/12	Information Capacity of PCM, Delta Modulation (DM)	Of Pulse Position Modulation(PPM)	
13	2/1	Adaptive DM, Delta-Sigma Modulation	Of Pulse Code Modulation(PCM)	
14	9/1	Differential PCM (DPCM), Line coding	Of Pulse Code Modulation(PCM)	
Half-year Break				
15	6/3	Intersymbol Interference (ISI)	Of Amplitude shift keying(ASK) modulation	
16	13/3	Pulse Shaping to reduce ISI, Matched Filter	Of Amplitude shift keying(ASK) demodulation	
17	20/3	Equalizer, Adaptive Equalizer	Of Frequency shift keying(FSK) modulation	
18	27/3	Amplitude Shift Keying (ASK)	Of Frequency shift keying(FSK) demodulation	
19	3/4	Frequency Shift Keying (FSK)	Of Phase shift keying(PSK) modulation	
20	10/4	Phase Shift Keying (PSK)	Of Phase shift keying(PSK) demodulation	
21	17/4	Coherent and Noncoherent Detection	Of Quadrature phase shift keying(QPSK) modulation	
22	24/4	Differential PSK	Of Quadrature phase shift keying(QPSK) demodulation	
23	1/5	Error Performance of Binary System	Of M-ary phase shift keying modulation	
24	8/5	Quadrature Phase Shift Keying (QPSK), Offset QPSK	Of M-ary phase shift keying demodulation	
25	15/5	Minimum Shift Keying	Error rate calculation of PSK	
26	22/5	Multilevel Modulation Techniques M-ary PSK, M-ary QAM	Error rate calculation of QPSK	
27	29/5	Bandwidth Efficiency and power Spectra of modulated Signal	Error rate calculation of QAM	
28	5/6	Carrier Recovery and Clock Recovery	Error rate calculation of MSK	

Instructor Signature:

Dean Signature:



Course Weekly Outline

Course Instructor	Mawada jlaa			
E_mail				
Title	Digital Communication			
Course Coordinator	First Term + Second Term			
Course Objective	Acquaint students on how to use MATLAB and its use in solving matrices, applications and programming calculations and the use of mathematical and logical functions exercises in addition to the programming interfaces using MATLAB and make some applications and examples about MATLAB.			
Course Description	Identify the MATLAB software environment, as well as explaining the Windows of MATLAB program and learn about the use of the software in solving mathematical and logical equations and functions of engineering, as well as resolve the matrices and make all the mathematical equations on matrices such as addition, subtraction, multiplication and use the program to draw graphs of equations and also use the program to print functions matrices and give a variety of examples on the various software applications.			
Textbook	INTRODUCTION TO MATLAB By Ross L. Spencer			
References	1. MatLab numerical computing, tutorials point simply easy learning www.tutorials point.com . 2. Matlab: A Practical Introduction to Programming and Problem Solving By Stormy Attaway College of Engineering, Boston University, Boston, MA			
Course Assessment	Term Tests	Laboratory	Quizzes	Final Exam
	First Term: 10 Second Term: 10	First Term: 10 Second Term: 10	First Term: 5 Second Term: 5	Lab : 10 Test: 40
General Notes				