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



## Academic program description form for colleges and institutes

University: Northern Technical Scientific Department: Computer systems techniques

Signature: A Department head name:

Abdul Rafi H. Marai

Signature : a

Scientific Associate Name: Dr. Raghad Ghalib Alsultan

Date: 6/9/2022 Date: 10/9/2023 The file has already been checked Quality Assurance and University Performance Division Name of the Director of the Quality Assurance and University Performance Division: Mohamed Khaled Youssef Date: 10/9/2023

Signature

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Dean's endorsement

مؤول شعبة شمان الجودة وتقويم الاداء

## Academic Program Description

This academic program description provides a requisite summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, proving whether have made maximum use of the available opportunities. It is accompanied by a description of each course within the program

1. Northern Technical University	Northern Technical University
2. Scientific Department / Center	Technical Institute / Mosul
3. The name of the academic or professional program	Computer Systems Technologies Department
4. The name of the final certificate	Technical Diploma
5. Academic system: Annual / courses / other	annual
6. Accredited Accreditation Program	ABET

7.Other external influences	There is a close relationship with the labor market that receives our graduates, as the labor market and its needs are monitored and compared with the curricula and through communication with official and semi-official departments by focusing on the software in force in those departments, as the curricula are
	updated accordingly.
8.Date of preparation of the description	Date of preparation of the description:1/6/2021

#### 9. Academic Program Objectives

The program aims to prepare qualified technical staff and possess some qualities such as:

• Technical qualifications that enable them to enter the labor market efficiently. Providing basic knowledge in the principles of computer systems technologies by learning the basics of programming and how to design websites and connect networks in addition to the methods and methods for maintaining the computer and its accessories.

• High skills in various sciences and disciplines of computer and informatics technology that are able to deal with work requirements using modern technical methods and develop the basic skills needed in the implementation and design of laboratory projects in addition to developing the ability to connect networks and address problems that occur using the latest software used at the global level.

• Enhancing the concepts of qualitative and quantitative excellence in order to achieve quality standards and scientific efficiency.

• Communication skills and developing the ability to organize and present information effectively, whether oral or written, or using video and audio means of communication.

Preparing the graduate to be successful in completing his scientific career by obtaining certificates beyond the technical diploma and providing broad attention to the problems that arise in professional practice, including teamwork, leadership, occupational safety, ethics, service and economics.

10. Required program outcomes and methods of teaching, learning and assessment

#### A- Cognitive goals

A1- Creating and checking data, entering it into the computer, and analyzing and designing database systems.

A2- The ability to maintain and typeset the various operating systems with the ability to install service programs.

A3- Designing and managing websites, as well as operating network operating systems and using various network and Internet applications.

A4- Participation in the preparation and design of software systems and the operation and use of various ready-made applications.

#### **B** - Skills objectives of the program

B1 - The ability to design and conduct experiments.

B 2 - The ability to implement software and configure databases with linking and distributing them through the network.

B3 - The ability to manage websites with the use of the latest design software.

B 4- The ability to use modern technological and technological applications and tools in accomplishing the necessary tasks.

#### Emotional and value goals.

C1- Brainstorming.

C - the ability to analyze.

C3 - The ability to solve problems.

C4 - the ability to infer.

- General and rehabilitative skills transferred (other skills related to employability and personal development).

D 1- The ability to work in a team.

D2 - the ability to communicate effectively.

D3 - Effective influence in society and the labor market through training and development programs related to specialization at various levels.

Teaching and learning methods

#### •lecture.

- Laboratory.
- Systematic training.

•summer training.

#### Evaluation methods

Oral exams.

- Daily exams.
- Practical exams.
- Quarterly exams.
- final exams.
- Practical projects.

#### 11. Program Structure

Credit	hours	Course or course name	Course or course	Educational level
practical	theoretical		code	
14	16	computer system technologies		The first stage
an hour a	an hour a	Department	TC1	
week	week			
18	14	computer system technologies		The second
an hour a	an hour a	Department	TC2	phase
week	week			

The	first	stage
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material	number	he r	iuml hou	ber of rs	Subject Name	ت
.ypc		S	р	th		
Specialty	10	5	3	2	C++ Programming	1
Specialty	6	3	-	3	Algorithms	2
Specialty	10	5	3	2	Computer Architecture	3
Specialty	10	5	3	2	Computer Maintenance	4
Assistance	10	5	3	2	Application Packages	5
Assistance	8	4	2	2	Mathematics & Numerical Analysis	6
Assistance	6	3	-	3	Advanced Statistics	7
General	4	2	-	2	Human Rights	8
General	2			2	English languages	9
	66	34	14	20	Total	

### The second phase

	he	Subje	ct N	ame		
number of units	number of hours	S	р	th	Subject Name	ت
Specialty	10	5	3	2	Data Structure	١
Specialty	10	5	3	2	Data Base	۲
Specialty	8	4	2	2	Operating Systems	٣
Specialty	6	3	-	3	System Analysis	£
Specialty	10	5	3	2	V.Basic Programming	٥
Specialty	6	3	2	1	Networks	٦
Specialty	6	3	2	1	Website Design	۷
Assistance	6	3	2	1	Project	٨
	62	31	17	14	Total	

#### 12. Personal development planning

The faculty members must be within the established staff and according to the ratio of students to the number of faculty members. Efficiency must have a role to cover all curricula, and there must be an ability to manage the institute sufficiently to accommodate levels of interaction, student guidance, counseling, university, professional and development services activities and interaction With practitioners and professionals as well as employers.

13. Admission criterion (setting regulations related to admission to a college or institute)

Average for graduates of the preparatory school / scientific section.

#### 14. The most important sources of information about the program

- •Methodological scientific books in the field of competence.
- Specialized practical books.
- •General and specialized computer programs.

	Curriculum skills chart																					
	Please check the boxes corresponding to the individual learning outcomes from the program being evaluated																					
			earn	ing o	utco	mes	requi	ired f	rom	the p	rogr	am										
Trans and skill emp de	sferre l qual ls (otl relate ployat perse evelop	ed gen ificat her sl ed to pility onal pmen	neral ion kills and t)	En V	notio /alue	nal a goal	nd s		Prog spe objec	gram cific ctives	5	Co	Cognitive goals			Cognitive goals			Basic Or optional	Course Name	Course Code	year/level
D4	D3	D2	D1	<b>C4</b>	<b>C</b> 3	<b>C2</b>	<b>C1</b>	<b>B4</b>	<b>B3</b>	<b>B2</b>	<b>B1</b>	A4	A3	A2	A1							
						$\checkmark$										Basic	C++ Programming		first			
	$\checkmark$					V										Basic	Algorithms					
																Basic	Computer Architecture					
V									V			V				Basic	Computer Maintenance					
		$\checkmark$														Basic	Application Packages					

	Mathematics & Numerical Analysis	Basic											
	Advanced Statistics	Basic		$\checkmark$									
	Human Rights	Basic		$\checkmark$									
second	Data Structure	Basic				$\checkmark$			$\checkmark$				
	Data Base	Basic		$\checkmark$					V				
	Operating Systems	Basic		$\checkmark$			$\checkmark$			V			
	System Analysis	Basic		$\checkmark$			$\checkmark$			V			
	V.Basic Programming	Basic	V		$\checkmark$							$\checkmark$	
	Networks	Basic											
	Website Design	Basic											
	Project	Basic		$\checkmark$									

#### course description form

**Course description** 

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made the most of the available learning opportunities. It must be linked to the description of the program.

ion Northern Technical University	1. Educational Institution
nter Computer Systems Technologies	2. Scientific Department / Center
ode TC24	3. Course name/code
ble theoretical - practical	4. Forms of attendance available
rear annual	5. Semester/year
tal)	6. Number of hours of study (total)
ion די א א א א א א א א א א א א א א א א א א	7. Date of preparation of this description
	15. Course objectives
now what databases are and how to deal with them	Know
Data Modeling and Design	
Types of relationships between spreadsheets	
Key types, indexing, and ordering	
ter, and analyzing and designing database systems.	Creating and auditing data, entering it into the computer, a
ration and design of software information systems.	Participation in the preparatio

#### 16. Course outcomes and methods of teaching, learning and assessment

#### A- Cognitive goals

A1- Creating and checking data, entering it into the computer, and analyzing and designing database systems.

A2- The ability to maintain and typeset the various operating systems with the ability to install service programs.

A3- Designing and managing websites, as well as operating network operating systems and using various network and Internet applications.

A4- Participation in the preparation and design of software systems and the operation and use of various ready-made applications.

#### B - Skills objectives of the course.

B1 - The student is trained on how to deal with different computer systems

B2 - To master the work of various projects

B3 - To complete the monthly projects

B 4- To complete the duties and work papers

#### Teaching and learning methods

#### practical theory

#### **Evaluation methods**

- 1- Theoretical exams (daily, monthly, final)
- 2- Oral exams
- 3- Posts inside the hall
- 4- Homework

#### C- Emotional and value goals

A1- That what the student studies commensurate with his inclinations and directions of thinking

C2- That the student feels the importance of correcting refractive errors in the eye

A 3- The student listens carefully to the teacher's explanation

C4- That the student feels what it means to be distinguished by knowledge and excellence

A 5- That the student recognize the impact of science and scientists

A 6- That the student is interested in respecting time and class system

#### **Teaching and learning methods**

1- A strategy according to the student's ability

2- High thinking skill strategy

3- Critical thinking strategy in learning

#### **Evaluation methods**

1- Theoretical exams (daily, monthly, final)

2- Daily Posts

#### 3- Homework

# **D- Transferred general and qualification skills (other skills related to** employability and personal development).

D1- Types of communication in the field of work

D 2- The ability to express and convey ideas clearly and confidently

D 3- Team work.

11. Course	Structure				
Evaluation method	education method	Unit name and/or topic	Required learning outcomes	hours	week
Exams	theoretical- practical	General introduction to databases + their features + comparison with traditional files	Add learning outcomes	2 theoretical 3 practical	1-2
Exams	theoretical- practical	Primary, secondary, and other keys	Add learning outcomes	2 theoretical 3 practical	3
Exams	theoretical- practical	Relationships between tables and their types	Add learning outcomes	2 theoretical 3 practical	4
Exams	theoretical- practical	Data Types	Add learning outcomes	2 theoretical 3 practical	5
Exams	theoretical- practical	Creating tables and entering data	Add learning outcomes	2 theoretical 3 practical	6-7
Exams	theoretical- practical	Displaying and modifying data + displaying a subset of data + block switching	Add learning outcomes	2 theoretical 3 practical	8-12
Exams	theoretical- practical	Delete, Recall and Permanent Delete pack,zap	Add learning outcomes	2 theoretical 3 practical	13-15
Exams	theoretical- practical	sort, indexing, locate, seek	Add learning outcomes		16-18
Exams	theoretical- practical	sum, average, count, and statistical and financial stimuli	Add learning outcomes		10-21
Exams	theoretical- practical	Normal form, 1NF, 2NF, 3NF	Add learning outcomes		22-26
Exams	theoretical- practical	data models	Add learning outcomes		27-28
Exams	theoretical- practical	Reports	Add learning outcomes		

#### 11. Infrastructure

Lectures according to the syllabus	1- Required prescribed books
Fundamentals of Database Systems 6 <sup>th</sup> edition Ramez Elmasri	2 main references (sources)
Data Modeling Fundamentals: A Practical Guide for IT Data Modeling Essentials	Recommended books and references (scientific journals, reports,)
https://www.pdfdrive.com/	B electronic references, websites

#### 17. Course Development Plan

1- Working on training an academic cadre capable of searching in books and resources that dealt with delving into the fields of computers, networks and information technology and making the milestones of this experience available to our dear students in order to enrich the scientific arena.

2- Activating the issue of scientific twinning between the corresponding departments at the local and regional levels

3- Activating electronic communication between our institute and other corresponding institutes and faculties, for the purpose of delivering information to the student as soon as possible.

4- Working on publishing distinguished graduation projects for second year students in order to push the scientific movement in the right direction