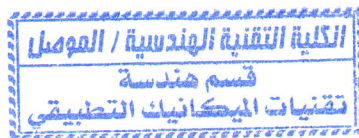


Ministry of Higher Education and Scientific Research
Scientific supervision and evaluation device
Department of Quality Assurance
and Academic Accreditation
Accreditation Department

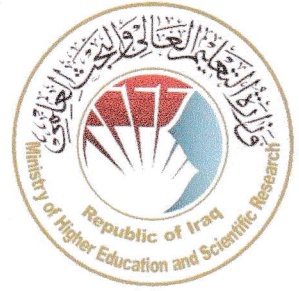


Academic program and course description guide

2024

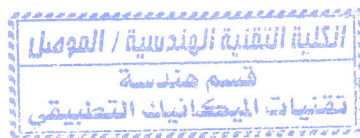


Ministry of Higher Education and Scientific Research
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Academic program and course description guide

2024



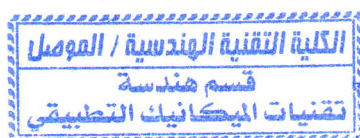
introduction:

The educational program is considered a coordinated and organized package of academic courses that includes procedures and experiences organized in the form of academic vocabulary, the main purpose of which 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 description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that students are working to acquire based on the objectives of the academic program. The importance of this description is evident because it represents the cornerstone of obtaining program accreditation, and the teaching staff participates in writing it under the supervision of the scientific committees in the scientific departments.

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the latest developments in the educational system in Iraq, which included a description of the academic program in its traditional form (annual, quarterly), in addition to adopting the description of the academic program circulated according to the book of the Department of Studies 3/2906. On 5/3/2023 with regard to programs that adopt the Bologna Process as a basis for their work.

In this area, we can only emphasize the importance of writing descriptions of academic programs and courses to ensure the smooth conduct of the educational process.



Concepts and terminology:

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

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

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

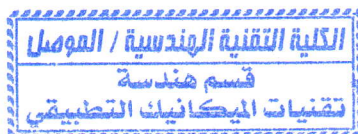
Program mission: It briefly explains the objectives and activities necessary to achieve them, and also specifies the developmental paths and directions of the program.

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/study subjects included in the academic program according to the approved learning system (semester, annual, Bologna track), whether it is a requirement (ministry, university, college, or scientific department), in addition to the number of courses and study units.

Learning Outcomes: A fixed set of knowledge, skills, and values that a student has acquired after successfully completing an academic program. The learning outcomes for each course must be defined in a way that achieves the program objectives.

Teaching and learning strategies: These are the strategies that a faculty member uses to develop the student's teaching and learning process, and they are the plans that are followed to reach learning goals. That is, it describes all curricular and extracurricular activities to achieve the learning outcomes of the program.



Academic program description form

University name: Northern Technical University

College/Institute: Engineering Technical College / Mosul

Scientific Department: Department of Applied Mechanical Techniques Engineering

Name of the academic or professional program: Bachelor of Applied Mechanical Techniques Engineering

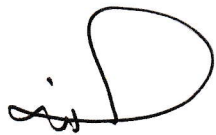
Name of final degree: Bachelor of Applied Mechanical Techniques Engineering

School system: Bologna

Description preparation date: 1/10/2024

Date of filling the file: 7/10/2024

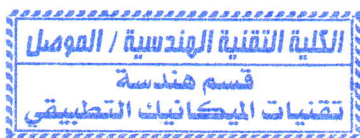
The signature:



Name of head of department:

Dr. Hussein Mohammed Ali

The date: 09/10/2024



The signature:



Name of the scientific assistant:

Dr. Muhammad Sabah Jarjees

The date: 09/10/2024

The file was audited by the Quality Assurance and University Performance

Division Name of the Director of the Quality Assurance and University

Performance Division: Warqaa Hashim Mahmood

The date: 09/10/2024

The signature:



Authentication of the Dean

Dr. Majid Khalil Najim

1. *program vision*

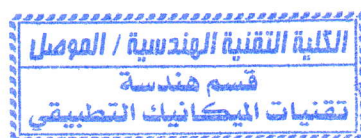
The department was established in 1998 under the name “Department of Refrigeration and Air Conditioning Technologies Engineering”, and in 2018, the department’s title was changed to “Department of Power Mechanics Technologies Engineering”, where its scope was expanded to include three specialized scientific branches based on the curriculum system, which are:

- 1- Refrigeration and Air Conditioning Branch.
- 2- Renewable Energy Branch.
- 3- Production and Automation Branch.

In 2022, the Production and Automation Branch was split to become an independent department due to its possession of distinct human and material capabilities, and it was named “Department of Applied Mechanical Technology Engineering.” The department receives students in the morning and evening studies for the academic year 2023/2024 in accordance with the Bologna International System, which has been ministerially approved as the latest Study system. In addition, the department provides the opportunity for postgraduate studies with a master’s degree in applied mechanics starting in the academic year 2024/2025.

2. *Program message*

Providing an ideal study environment for students by combining theoretical and practical aspects by organizing valuable scientific lectures in areas of specialization, and implementing interactive laboratory experiments that enhance practical learning. As well as involving students in creative scientific research related to the local and global environment, with the aim of serving the community and providing innovative engineering solutions to develop their skills and expertise, which meets the needs of the evolving labor market.



3. *Program Objectives*

The department seeks to provide high-quality technical education, by following the rapid technical developments in the world, including modernity in presentation and modernization of the curriculum to consolidate the foundations of technical development. The department also aims to equip graduates with the skills and experience that meet the needs of the market, while ensuring and confirming the solid quality of the outputs. Educational skills for future engineering students. The department aspires to graduate distinguished applied engineers in the field of modern applications and devices, who will be able to:

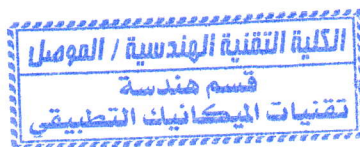
1. The department aims to graduate students capable of simulating the labor market with basic information and skills.
2. Design and implement maps for the installation and operation of modern devices.
3. Install and operate devices and machines on a correct basis in accordance with the vision of the designing and manufacturing companies.
4. Contributing and supervising the maintenance of various devices and units.
5. Research, develop and find replacement parts for units that may malfunction.
6. Work in accordance with the preventive maintenance methodology and the mechanisms for activating it in a systematic and thoughtful manner.

4. *Programmatic accreditation*

Program of the Ministry of Higher Education and Scientific Research.

5. *Other external influences*

nothing



6. Program structure

Program structure	Number of courses	Study unit	percentage	comments
Enterprise requirements	7	18	16%	Basic course
College requirements	8	49	19%	
Department requirements	27	173	65%	
Summer training	2		---	
Other				

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

7. Program description

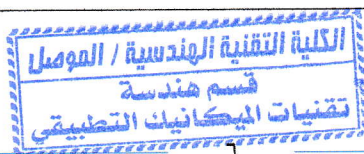
Year/level	Course code	Name of the course	Credit hours	
The second 2023-2024	TEMO 200	Mathematics	175	Theoretical

8. Expected learning outcome of the program

knowledge

A. Cognitive goals

1. Conducting mathematical calculations and designing mechanical parts using computers, and studying the economic feasibility of various projects in the field of specialization.
2. Diagnosing faults and performing maintenance and repair work on mechanical systems for industrial and service purposes.
3. Conducting research and studies and searching for alternatives in the field of specialization.
4. Design production lines using diverse manufacturing methods to achieve maximum efficiency.
5. Improving production processes and controlling devices and machines. Manage the work of machines using the latest technologies.



skills

B. Skills objectives of the program

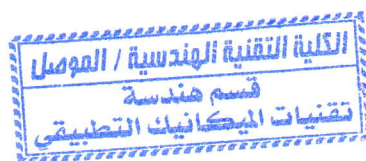
1. Conduct mathematical calculations and design mechanical parts.
2. Conduct non-destructive analyzes and examinations of mechanical parts.
3. Conduct experiments and test failure of parts.

value

Developing students' abilities to share ideas and apply them in reality.

9. *Teaching and learning strategies*

1. Active Learning
2. Imaging Tools
3. Practical examples
4. Collaborative learning
5. Problem-based learning
6. Multimedia Resources
7. Guest speakers and industrial visits
8. Formative Assessment



10. Education institution

Students' participation in solving mathematical problems is an important process that contributes to enhancing their understanding of mathematical subjects and developing their mental skills. Here are some ways in which students can be encouraged to participate in solving mathematical problems:

1. Providing a supportive atmosphere:

- Create a classroom environment that encourages the use of mathematical problems as a learning opportunity.
- Encouraging students to exchange ideas and cooperate in solving problems with each other.

2. Presenting issues in an exciting way:

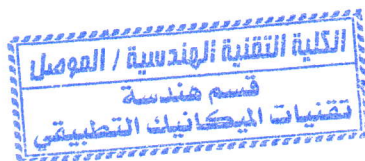
- Choose problems that are stimulating and arouse curiosity, so that students feel a desire to solve them.
- Use everyday issues or applied examples to capture students' interest.

3. Provide various challenges:

- Providing a variety of problems at different difficulty levels, so that each student finds a challenge appropriate to his level.

11. Evaluation method

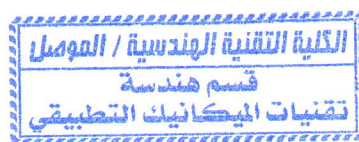
Daily tests, mid-term exams, final exams, descriptive homework assignments
Weekly reports on the subject and seminars.



Faculty members

Permanent/ contract	Position/responsibility	Exact specialization	General jurisdiction	Academic title/ job title	Certificate	Name
Permanent	Dean of the College	Applied mechanics	mechanical engineering	Professor	Doctorate	<i>Majed Khalil Najm</i>
Permanent	Head of Department	Applied mechanics	mechanical engineering	Assistant Professor	Doctorate	<i>Hussein Mohammed Ali</i>
Permanent	Department rapporteur	Applied mechanics	mechanical engineering	Lecturer	Doctorate	<i>Ayman Sabah Rashad</i>
Permanent	Teaching	Minerals	Production and metallurgy engineering	Professor	Doctorate	<i>Haitham Mohammed Waddallah</i>
Permanent	Teaching	Minerals	Production and metallurgy engineering	Professor	Doctorate	<i>Jamal Naif Sultan Haso</i>
Permanent	Teaching	Applied mechanics	mechanical engineering	Lecturer	Doctorate	<i>Thamer Awn-din Mohammed</i>
Permanent	Teaching	Applied mechanics	mechanical engineering	Assistant Professor	Master	<i>Tariq Khaled Abdulrazaq</i>
Permanent	Teaching	Computer techniques	Computer technologies	Assistant Lecturer	Master	<i>Lulwa Abdulwahab Yasin</i>
Permanent	Teaching	Applied mechanics	mechanical engineering	Assistant Lecturer	Master	<i>Abdulrahman Sami Aqeel</i>
Permanent	Teaching	language	Arabic Language	Assistant Lecturer	Master	<i>Shaimaa Salem Hameed</i>
Permanent	Teaching	electricity	electricity	Assistant Lecturer	Master	<i>Omer Abdul-Jabbar Mohammed</i>
Permanent	Teaching	Refractories	Mechanical	Assistant Lecturer	Master	<i>Mohammed Raad Abdel Wahab</i>
Permanent	Statistics unit official	Computer techniques	Computer technologies	Assistant Lecturer	Master	<i>Hassan Abdullah Abdullah</i>
Permanent	Engineer	Production and materials	Mechanical	Assistant Lecturer	Master	<i>Zeina Saad Abdul- Jabbar</i>
Permanent	Department secretariat	Production and materials	Mechanical techniques	Technical	Technical Diploma	<i>Wael Riad Daoud</i>

Permanent	Technical	Production and minerals	Mechanical techniques	Technical	Technical Diploma	Muhammad Taha Yassin
Permanent	Technical	production	Mechanical	Technical	Technical Diploma	Yasser Muhammad Shehab
Permanent	Technical	Welding oil equipment	Mechanical	Technical	Technical Diploma	Abdul Sattar Khalaf Hamad
contract	Technical	Production and minerals	Mechanical	Technician/Ministerial Contract	Technical Diploma	Amer Younis Mayouf
Permanent	Responsible for the department's workshops, laboratories and stores	Refrigeration & Air Conditioning	Machines and equipment	Assistant technical director	Technical Diploma	Ali Hussein Abdul Karim
Permanent	Computer lab administrator	Refrigeration & Air Conditioning	Refrigeration and air conditioning technology engineering	Assistant technical engineer	Bachelor's	Abdul Rahman Natiq Abdul Ghani
Permanent	Technical	Refrigeration & Air Conditioning	Power mechanics	Technical	Technical Diploma	Mohammed Muthana Salim Ahmed
Permanent	student affairs	Mechanics	Mechanics	technical engineer	Bachelor's	Abd alrahman dakwan



Professional development

Orienting new faculty members

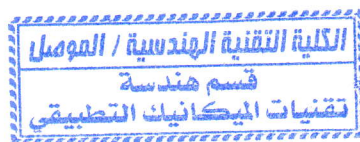
- Training courses within the institution.
- University activities.
- Seminars and scientific seminars.

Professional development for faculty members

- Scientific research.
- Seminars and scientific seminars.
- self education.

12. Acceptance criterion

- Scientific section.
- Professional study.
- The average.

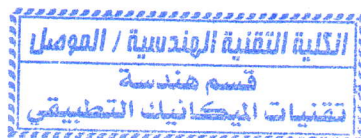


13. The most important sources of information about the program

- Methodological books.
- Help resources (Internet).
- Scientific research and its latest developments.

14. Program development plan

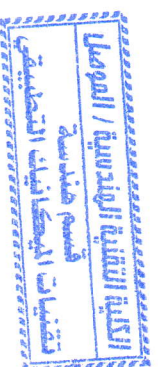
Learn about the experiences of Arab and foreign counterpart universities and colleges and benefit from the development taking place with them.



Curriculum skills chart

				Learning outcomes required from the program											
Year/level	Course Code	Course Name	Core or basic	Knowledge				Skills				the value			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
The First Level	NTU 100	Democracy and Human Rights	Basic	B		TH		TH		B	E	TH	P		E
	NTU 101	English Language	Basic	TH				TH		P			R		R
The Second Level	TEMO 200	Mathematics	Basic	TH	E	B		E			TH		P		
	AM 200	Engineering Materials	Core	TH	B	P									TH
The Third Level	AM 302	Vibration	Core	TH	B			S			R		E		
	AM 303	Metal forming	Core	TH	P			B			P				TH
The Fourth Level	TEMO 400	Scientific research methodology	Basic	TH	E			B			E				
	AM 400	Control systems	Core	TH	E	B									

P/Practice Pr/Project S/Seminar R/ report TH/ theoretical B/Book E/External



Course Description Form

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

1. Educational institution

Northern Technical University / Engineering Technical College / Mosul

2. Scientific department/center

Department of Applied Mechanics Techniques Engineering

3. Course name/code

Mathematics

TEMO 200

4. Available attendance forms

daily

5. Semester/year

Three \ 2024-2025

6. Number of study hours (total)

6000H

7. Date the description was prepared

7/3/2024

8. Course objectives

Delivering the academic material that the student must receive according to the instructions mentioned in the special skills section Required educational outcomes and teaching, learning and evaluation methods.