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

Academic Program Description Form

University Name: Northern Technical University

Faculty/Institute: Al-dour Technical Institute

Scientific Department: Mechanical techniques

Academic or Professional Program Name: Technical diploma

Final Certificate Name: Technical diploma in Mechanical techniques

Academic System: Curriculum system

Description Preparation Date: 15/9/2024

File Completion Date: 17/9/2024

Signature:
Head of Department Name:Lec.Dr.Asmaa Muneam Abdullah
Date:

Signature:
Scientific Associate
Name:Pro.Dr.Hanan Shihab Ahmed
Date:

The file is checked by: Ass.Lec. Haider Ali Muhsen
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

The Department of Mechanical Engineering is one of the main technological departments. The department is working towards expanding the base of technical education and its modern applications, becoming a leader in providing certified technical services, in a spirit of competition and cooperation with the community

2. Program Mission

The Department of Mechanical Technology has adopted a general mission based in its general form on the framework of technical education in Iraq, which it seeks to achieve every year to highlight the department's distinguished aspect. The general objectives focus on graduating national technical cadres at a level of education and training that are capable of absorbing technology systems and supporting the process of technical development to keep pace with rapid global technical developments. The department's mission includes.

3. Program Objectives

The Production Branch aims to prepare technical staff to serve as a link between specialists and skilled workers. The department prepares and equips graduates with theoretical, practical and applied information to enable them to carry out the tasks assigned to them

4. Program Accreditation

No program accreditation

5. Other external influences

The labor market, through its follow-up, aims to qualify our students in a manner that suits them, in addition to the summer training program.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	10	20	17.39%	essential
College Requirements	4	12	10.4%	essential
Department Requirements	23	83	72.1%	essential
Summer Training	–	–	–	achieved
Other	–	–	–	–

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			practical	theoretical
FIRST LEVEL	METP125	alloys casting	2	–
	METP121	dynamic mechanics	2	2
	NTU102	computer	1	1
	METP120	(static mechanic	2	2
	TIMO110	mathematics 1	2	–
	TIMO111	mathematics 2	2	–
	NTU 101	English language	2	–
	NTU 100	Democracy and human rates	2	–
	NTU 105	sport	1	1
	METP122	Welding and measurements	2	2
	METP123	casting	2	2
	METP126	2-D engineering drawing	–	3
	METP127	3-D engineering	–	3

		drawing		
	TIOM112	Mechanical workshops	–	**6**
	METP129	Electricity technology	**1**	**2**
	NTU 104	Arabic language	**2**	–
	METP131	Summer training	–	–
	METP128	Advanced workshops	–	**6**
	METP124	Metal material properties	**2**	–
Second level	METP210	principals of machines parts	**2**	–
	METP212	(tolerances engineering	**2**	**2**
	METP211	crystal metallurgy science	**2**	**2**
	METP214	primary machining workshops	–	**6**
	NTU 204	occupational ethics	**2**	–
	NTU 201	computer	**1**	**1**
	METP218	principals of industrial drawings	–	**3**
	NTU 203	Baath crimes in Iraq	**2**	–
	TUDO203	principles of occupational ethics	**2**	–
	METP223	welding processes	**2**	–
	METP211	advanced machine parts)	**2**	–
	METP213	operation processes	**2**	**2**
	MTP212	physical metals properties	**2**	**2**
	METP215	advanced machining workshops	–	**6**
	METP216	**project**	–	**2**
	METP219	advanced(industrial drawing	**2**	–
	TUDO204	industrial management	**2**	–
	NTU202	**Arabic language**	**2**	–
	METP224	metal forming processes	**2**	**2**

8. **Expected learning outcomes of the program**	
Knowledge	
Knowledge and Understanding .A	Learning Outcomes Statement 1
	A1. Understanding metallic materials and non-metallic structures.
	A2. Understanding chemical and physical properties of metallic and non-metallic materials.
	A3. Understand computer architect
	A4. Understand Allocation techniques
	A5. Understand the operating system, basic tasks, memory storage and management
	A6. Understanding of the importance of manufacturing process to the economy and design
Skills	
Subject-specific skills .B	B1. Classified metallic and non-metallic materials..
	B2. Heat treatments for aluminum , magnesium and copper alloys and ceramics material
	B3. Use the drawing instruments; draw two dimensional drawings, isometric drawings
	B4. Present with basic skills for 2-D and 3-D vectors and concept of force, moment and equilibrium
Ethics	
	professional and academic ethics among students and faculty. The program emphasizes integrity, responsibility, and respect in all academic and professional activities. Students are expected to: Adhere to honesty and transparency in assignments, projects, and research. Respect intellectual property rights and avoid plagiarism in any form. Follow safety regulations, environmental sustainability principles, and professional codes of conduct in engineering practice. Demonstrate respect, fairness, and inclusiveness in

	interactions with peers, faculty, and the community. By integrating ethical principles into coursework, laboratory work, and practical training, the program ensures that graduates are prepared to uphold the highest standards of professionalism in the mechanical engineering field.

9. **Teaching and Learning Strategies**
Through the presentation of a theoretical explanation with the aid of white board and 'Data Show', to illustrate syllabus (examples and exercises) and using text books

10. Evaluation methods
Written examination :To assess knowledge , understanding and skills 1.(First half of the academic year , Mid-year exam, Second half of the academic year, final exam the academic year) . 2. Oral examination: To assess knowledge, skills and intellectual functions, and attitude, written exams 3. Assignments & other activities 4. Quizzes (Shock exams homework. and reports

11. Faculty

Faculty Members

Academic Rank	**Specialization**		**Special Requirements/Skills (if applicable)**		**Number of the teaching staff**	
	General	**Special**			**Staff**	**Lecturer**
lecturer	Mechanics	applied	PhD		permanent	

			engineering			
lecturer	Mechanics	Internal ignition	PhD Engineering		permanent	
Assistant lecturer	Mechanics	production	MSc Engineering		permanent	
Assistant lecturer	Mechanics	production	MSc Engineering		permanent	
MSc electricity engineering	electricity	electricity	MSc Engineering			Lecturer

Professional Development
Mentoring new faculty members
The admission criteria is through central admission within the Ministry's plan, according to the student's branch in middle school and his GPA
Professional development of faculty members
The department adopts a comprehensive academic and professional development plan for faculty, focusing on modern teaching strategies, continuous assessment, and ongoing growth. Faculty are encouraged to use student-centered and technology-driven teaching methods, while learning outcomes are regularly evaluated through diverse assessment tools to ensure quality education. Professional development is supported through workshops, research opportunities, industry collaboration, and training in instructional design and outcome-based education, ensuring faculty remain current and effective in their roles.

12.**Acceptance Criterion**
(The textbook, auxiliary materials, external Internet sources, scientific

research and its latest developments

13.**The most important sources of information about the program**
1. Developing the mechanics department's laboratories and developing the curriculum through deletion, addition, and substitution. 2. Learning about recent scientific developments. 3. Participating in international and local conferences. 4. Participating in scientific workshops inside and outside Iraq. 5. Hosting scientific experts in the field of specialization

14.Program Development Plan
1. Developing the mechanics department's laboratories and developing the curriculum through deletion, addition, and substitution. 2. Learning about recent scientific developments. 3. Participating in international and local conferences. 4. Participating in scientific workshops inside and outside Iraq. 5. Hosting scientific experts in the field of specialization

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
First level	METP125	Metal alloys	basic	✓			✓	✓	✓		✓	✓	✓	✓	
	METP121	Dynamic mechanics	basic	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	NTU102	Computer	basic	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	METP120	Static mechanics	basic	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	TIMO110	Mathematics 1	basic	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	TIMO111	Mathematics2	basic	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	NTU 101	English language	basic	✓			✓	✓			✓	✓	✓	✓	
	NTU 100	Democracy and human rates	basic	✓			✓	✓			✓	✓	✓	✓	
	NTU 104	Sport	option	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

			al													
	METP122	Welding and measurements	**basic**	✓			✓	✓	✓		✓	✓	✓	✓	
	METP123	Casting	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	METP126	Engineering Drawing 3D	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	METP127	Engineering drawing 2D	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	TIOM112	Mechanical Workshop	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	METP129	Electricity technology	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	NTU 103	Arabic language	**basic**	✓			✓	✓			✓	✓	✓	✓	
	METP131	Summer training	**basic**	✓			✓	✓			✓	✓	✓	✓	
	METP128	Advanced properties	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	METP124	Metal material properties	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

Second level	METP210	Principles of machine parts	**basic**	✓			✓	✓	✓		✓	✓	✓	✓	
	METP212	Engineering tolerance	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	MTP211	Crystallographic metal science	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	METP214	Primary workshops	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	NTU 204	Occupational ethics	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	NTU 201	Computer	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	METP218	Principles of industrial drawing	**basic**	✓			✓	✓			✓	✓	✓	✓	
	NTU 203	Baath crimes in iraq	**basic**	✓			✓	✓			✓	✓	✓	✓	
	TUDO203	Occupational safety principles	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	METP223	Welding processes	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	METP211	Advanced machine	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

		parts													
	METP213	Operation processes	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	MTP212	Physical metal properties	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	METP215	Advanced workshopes	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	MTP216	Project	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	METP219	Advanced Industrial drawing	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	TUDO204	Industrial management	**basic**	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	NTU202	Arabic language	**basic**	✓			✓	✓	✓		✓	✓	✓	✓	
	METP224	metal forming processes	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
	NTU200	English language	**basic**	✓			✓	✓	✓		✓	✓	✓	✓	
	NTU201	computer	**basic**	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓