Northern Technical University

Technical Institute / Mosul

Power Mechanic Techniques Department

The Power Mechanic Techniques department consists of two branches. First one is **Automobile program** and the second one is **Refrigeration and Air Conditioning program**.

1- **Automobile program:**

The program is designed to teach and train the technical staff that will be a link between the specialist and the skilled worker. The student will be developed and provided with theoretical, and practical information to be able to carry out the tasks assigned, such as:

1- Identify the mechanical and electrical faults in cars.

2- Carry out regular maintenance for gasoline and diesel cars.

3- Manage and operate service and maintenance stations.

- **Program Requirements**
- Mode & Duration of Study:

The Power Mechanic Techniques-Automobile (PMTA) program extends to two years **full-time** study.

Courses are extended for two academic years study, according to the **Annual system** as follows:

1- The **first academic year** includes (11) subjects, whereas, (3) of them are specialized, (5) of which are assistive, and (3) are general, with a total units of (66) per week.

Mode of study:

The mode of study is **Annual** system.

Duration of study:

Students must fulfill two semesters of (30) weeks, with a total of (30) hours per week.

2- The **second academic year** includes (11) subjects, whereas (8) are specialized (3) of them are assistive.

Mode of study:

The mode of study is **Annual** system.

Duration of study:

The duration study for the two semesters: 30 weeks, with a total of (33) hours per week.

- **Medium and Curricula Assessment:**

The program of the MPTA will be taught in Arabic with the exception of four subjects which are (Engineering Mechanics-1st year, Thermodynamics-1st year, Automobile Mechanics-2nd year and Internal Combustion Engines-2nd year) are taught in English. The Medium Assessment consists of a quarterly and semi-annual exam, as well as the final exam and summer training.

- **Graduation Requirements:**

The students enrolling this program must complete (21) subject with a total of (132) units. The graduation project, as well as the summer training (8 weeks) as a part of fulfillment required for obtaining the technical diploma.

- **Curriculum structure:**

Total required Curricula: 20 Credits
First year Curricula: 10 Credits
Second year Curricula: 10 Credits

- **Curricula:**
- **First year Curricula:**

Curriculum Name	Hours per Week			Units No.	Curriculum Type	Teaching language
	Theoretical	Practical	Total			
Automobiles maintenance (1)	2	4	6	12	Specialized	English
Thermodynamics	2	1	3	6	Specialized	Arabic
Engineering mechanics	2	1	3	6	Assistive	English
Automobiles electricity	1	2	3	6	Specialized	Arabic
Workshops	0	6	6	12	Assistive	Arabic
Mathematics	2	0	2	4	Assistive	Arabic
Engineering drawing	0	3	3	6	Assistive	Arabic
Computer applications	2	2	4	6	Assistive	
Human Rights	2	0	2	4	General	Arabic
English language	1	0	1	2	General	
Arabic language	1	0	1	2	General	Arabic
Total	15	19	34	66		

- **Second year Curricula:**

Curriculum Name	Hours per Week			Units No.	Curriculum Type	Teaching language
	Theoretical	Practical	Total			
Automobiles mechanics	2	0	2	4	Specialized	English
Internal combustion engines	2	2	4	8	Specialized	Arabic
Automobiles electricity	2	1	3	6	Specialized	English
Automobiles bodies	1	2	3	6	Specialized	Arabic
Automobiles maintenance (2)	2	6	8	16	Specialized	Arabic
Management and occupational safety	2	0	2	4	Assistive	Arabic
Computer applications	1	2	3	6	Assistive	Arabic
Industrial drawing	0	3	3	6	Specialized	
Modern automobiles technology	2	1	3	6	Specialized	
English language	1	0	1	2	General	
Project	0	2	2	4	Specialized	
Total	15	16	34	68		

2-Air-conditioning and refrigeration program:

The program is designed to teach and train the technical staff that will be a link between the specialist and the skilled worker. The student will be developed and provided with theoretical, and practical information to be able to carry out the tasks assigned, such as:

1- Design and calculate the cooling and heating load for the building.
2- Identify the difference between the control system and devices in HVAC systems.
3- Carry out the maintenance of different HVAC systems.

- **Program Requirements**
- **Mode & Duration of Study:**

Power Mechanic Techniques-Air conditioning and Refrigeration (PMTR) program extends to two academic years **full-time** study.

Courses are extended for two academic years, according to the **Annual system** as follows:

1- **The first academic year** includes (11) subjects, whereas (3) of them are specialized, (5) of which are assistive, and (3) of them are general, with a total units of (64) per week.

Mode of study:

The mode of study is the **Annual** system.

Duration of study:

Duration of study for the two semesters: (30) weeks, with a total of (31) hours per week.

2- **The second academic year** includes (10) subjects, whereas (7) of them are specialized and (3) are assistive.

Mode of study:

The mode of study is **Annual** system.

Duration of study:

Duration of study for the two semesters: (30) weeks, with a total of (30) hours per week.

- **Medium and Curricula Assessment:**

The program of the MPTR will be taught in Arabic except four subjects, which are (Principles of Refrigeration and Air Conditioning-1st year, Engineering Mechanics-1st year, Heat Transfer-2nd year and Air Conditioning-2nd year) are taught in English. The Medium Assessment consists of a quarterly and semi-annual exam, as well as a final exam and summer training.

- **Graduation Requirements:**

The student is required to complete all (20) subject with total of (124) units. The graduation project, as well as the summer training (8 weeks) as part of fulfillment required for obtaining the technical diploma.

- **Curriculum structure:**

  Total required Curricula: 20 Credits
  First year Curricula: 11 Credits
  Second year Curricula: 9 Credits

- **Curricula:**
- **First year Curricula:**

Curriculum Name	Hours in Week			Units No.	Curriculum Type	Teaching Language
	Theoretical	Practical	Total			
Principles of Refrigeration & Air Conditioning	2	2	4	8	Specialized	English
Engineering Mechanics	2	1	3	6	Assistive	Arabic
Thermodynamics	2	1	3	6	Specialized	English
Electricity Techniques	2	2	4	8	Specialized	Arabic
Workshops	0	6	6	12	Assistive	Arabic
Mathematics	2	0	2	4	Assistive	Arabic
Engineering Drawing	0	3	3	6	Assistive	Arabic
Computer Applications	1	2	3	6	Assistive	Arabic
Human Rights	2	0	2	4	General	Arabic
English Language	1	0	1	2	General	Arabic
Arabic Language	1	0	1	2	General	Arabic
Total	15	14	32	64	General	

- **Second year Curricula:**

Curriculum Name	Hours in Week			Units No.	Curriculum Type	Teaching Language
	Theoretical	Practical	Total			
Air conditioning	2	2	4	8	Specialized	English
Refrigeration systems	2	2	4	8	Specialized	Arabic
Heat transfer	2	1	3	6	Specialized	English
Control systems & devices	2	1	3	6	Specialized	Arabic
Maintenance of refrigeration devices	2	4	6	12	Specialized	Arabic
Systems drawing	0	3	3	6	Specialized	Arabic
Management and occupational safety	2	0	2	4	Assistive	Arabic
Computer applications	1	2	3	6	Assistive	Arabic
English language	1	0	1	2	General	
Project	2	0	2	4	Specialized	
Total	16	15	31	62		