

**Northern Technical University
Kirkuk Technical Institute
Department of Mechanical Technology**



Scientific Plane for the academic year 2024-2025 to the Mechanical Techniques Department



Scientific Plane for the academic year 2024-2025

1- Research of Lectures

2- Seminars for Teaching Staff

Sequence	Start date	Instructor's name	Research title
1	9/1/2024	Mahmoud Hussein Khalil	Reducing air - conditoning load by using an insulating material in Iraq as a case study (Experimental and Numrical)
2	9/1/2024	Ahmed Salar Jalal Amin	Use mathematical method to solve heat transfer problem
3	9/1/2024	Mahmoud Aref Mohammed	Study of the mechanical properties of aluminum-silicon alloy
4	9/1/2024	Mahmoud Aref Mohammed	Direct assessment of pv model performance based on tow different pv metal structure (single crystalline silicon and multi-crystalline silicon) through internal effects
5	9/1/2024	Mohamed Salam Taha	Circular perforations on vertically sinusoidal wave form plate fin heat sink for laminar natural convection heat dissipation
6	9/1/2024	Mohamed Salam Taha	Numerical Study the effect of circular hole diameters on fins when using nanofluids Al ₂ O ₃ /water in heat sinks for cooling electronic devices

sequence	Location of the Event	Episode date	Instructor's name	Episode title
1	Department of Mechanical Technology	11/18/2024	Mahmoud Hussein Khalil	Using new types of building materials aimed at reducing the thermal loads of buildings
2	Department of Mechanical Technology	12/5/2024	Dr. Samin Fadel Mohammed	Comparison of the optical properties of pure and doped Iron-Nickel Alloys
3	Department of Mechanical Technology	1/29/2025	Mahmoud Aref Mohammed	Identifying the types of cast iron
4	Department of	2025/3/16	Mohamed Salam Taha	used energy

	Mechanical Technology			
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3- Scientific Updates for Teaching Staff:

Sequence	Location of the Event	Session date	The instructor in charge	title New
1	of Department Mechanical Engineering	10/10/2024	Mahmoud Aref Mohammed	Heat treatments and their mechanical effect on the properties of carbon steel
2	of Department Mechanical Engineering	10/15/2024	Samin Fadel Mohammed	Artificial Intelligence Concepts
3	of Department Mechanical Engineering	5/11/2024	Ahmed Salar Jalal	Using ordinary differential to detect forged equations artistic paintings

4- Extracurricular Student Activities:

Sequence	Activity history	Type of activity
1	2024/29/12	grade orientation party-First
2	09-11/03/2025	Scientific competitions
3	Announced in due course	football match

5- Continuing Education Courses:

Sequence	Course date	Course title
1	2025/1/26-28	Study of the electronic structure of tungsten oxideWO2 UsingModel Ionic
2	2025/2/16-18	performance using Study of thermal effects on mechanical Solid Work software
3	2025/4/6-10	Wind energy systems

6- Scientific Film Screenings:

Class	Show date	Show title
First and second	30/1/2025	The effect .Show two videos to students that explain and clarify of greenhouse gases on global warming
First and second	12/02/2025	Turbin videos on how turbines work Wind
First and second	3/23/2025	Types of crystal networks
First and second	04/17/2025	A film about modern welding methods

7- Scientific Visits:

Beneficiary class	Date of visit	visit Place of
First	2025/13/04	Kirkuk Cement Factory
Second	04/20/2025	Kronji Company Laboratory-Al

8 : Study sessions for students -

Episode date	Supervisor's name	Number of students	episode title Student
7/11/2024	Mahmoud Hussein Khalil	37	organization of Classification and refrigeration and air conditioning according to human uses
10/23/2024	Mahmoud Aref Mohammed	37	Metal casting methods
3/12/2024	Mohamed Salam Taha	37	Ways to use artificial intelligence programs

9 :Student research -

Discussion date	Implementation period	Supervisor's name	Number of students	Research title
18/3/2025		Mahmoud Hussein Khalil	6	Experiment with a solar panel collector at various flow rates and their effect on panel efficiency

10 :Scientific reports for students -

Execution date	Number of reports	Scientific Department
-	60	Mechanical Technologies

11 Development Studies -

Instructor's name	title Study
Mahmoud Hussein Khalil	Development of a lightweight, highly thermally efficient building material
Samin Fadel Muhammad .D	Use of nanotechnology in the manufacture of resistors

12 : Workshops -

Date of convening	Where she lives	title Workshop
10/31/2024	Mahmoud Hussein Khalil	The effect of halocarbon gases on the ozone layer in the atmosphere
11/28/2024	Hadeel Ali Hassan	The effect of ozone gas on the environment

13 : Scientific seminars -

Date of convening	Title of the scientific symposium
02/01/2025	reviewed international -Publishing in peer journals / Publishing steps
02/26/2025	The practical aspect and its impact on the learner's understanding of the scientific material
04/21/2025	Types of renewable energies and their uses

14 - : Educational seminars

Date of convening	the line	Educational seminar title
22/9/2024	the second	in nominating the professors The role of educational laws in force in solid intellectuals
01/12/2024	First and second	Commitment to lecture times
03/11/2024	First and second	The role of the student in building society

15 :study hours for the first and second grades Scheduled -

* (hour /week) 30 = First row2 60 = (departments)

* (hour /week) 30 = Second grade1 30 = (people)

hours 90 = 30 + 60 = Total hours

