

1- About the program

Aim of the Program

The MSc in Technical Master in Thermal Engineering Technologies program Postgraduate studies are one of the most important productions of the scientific department, and the college is on the path of advancement and progress because of its serious connection in giving treatments and solutions to the complications of society towards strengthening national capabilities, reducing the technical gap with developed countries and pushing society forward, in addition to its contribution to develop the capabilities of a faculty member. Postgraduate studies are also one of the most important standards used in determining the extent to which the college plays its leadership role in the fields of knowledge, and it is an important and vital element in the college's life as an intellectual and scientific institution and an international reputation.

The technical master's study in thermal engineering aims to prepare a specialized staff in the field of thermal engineering techniques and qualifies the graduate to be able to: -

1. Conducting studies and research within his specialization.
2. Providing scientific advice and solving problems in the field of work within its competence.
3. Attention to issues of scientific progress.
4. Make scientific cohesion and collaboration between the college and research centers.
5. Graduating engineering and scientific staff capable of discharging knowledge, whether inside or outside the college and in the various departments of the state.

Medium and Course Assessment

1. Conducting studies and research within the specialty
2. Providing scientific and practical advice and solving problems in the field of work
3. Modernization and design of thermal energy, refrigeration and air conditioning systems to suit climatic and environmental conditions
4. Study of renewable energy and the use of alternative devices that consume electrical energy and fuel in industrial and service facilities

Reasons for postgraduate studies with a master's degree in Thermal Engineering Technologies:

1. Postgraduate studies work on developing the engineering and technical staff in the scientific departments through advanced lectures and modern topics in the areas of specialization.
2. To dispense the need for sending students outside Iraq for the purposes of postgraduate studies and to provide a hard currency for the country, especially since the country is experiencing difficult economic conditions.
3. Graduation of engineering staff with higher degrees to work at the Northern Technical University and Iraqi universities as teachers in scientific departments in order to achieve self-sufficiency.
4. Granting the opportunity to obtain a master's degree to many members of the Northern Technical University who hold a bachelor's degree in mechanical engineering and hold teaching titles.

Mode and Duration of Study : -

Acceptance of graduates who hold a bachelor's degree and who are scientifically qualified according to the average and the results of the test conducted for this purpose and from the following scientific departments: -

1. Mechanical engineering is a general specialization.
2. Refrigeration and Air Conditioning Technologies Engineering.
3. Engineering of machinery and equipment.

Admission Requirements: -

Admission to postgraduate studies for the above specializations considers the admission requirements approved by the Ministry of Higher Education and Scientific Research to obtain a master's degree in terms of average, specialization, English language proficiency and (IC3) certificate.

Graduation Requirements

Technical Master's Degree in Thermal Engineering Technologies in the Department of Power Mechanics Techniques Engineering Required;

Total credits required : 46

34 credits for courses

12 credits for thesis project

a) First Semester

No	Course No.	Subject	No. Hr./Week		No. of Units
			Theoretical	Practical	
1	01	Advanced Fluid Mechanics	2	2	3
2	02	Advanced Heat Transfer	2	2	3
3	03	Advanced Numerical Analysis	2	---	2
4	04	Advanced Engineering Materials	2	---	2
5	05	Advanced Machine Design	2	2	3
6	06	Advanced Applied Mathematics	2	---	2
7	07	English Language	2	---	2
		Total	15	6	17

b) Second Semester

No.	Course No.	Subject	No. Hr./Week		No. of Units
			Theoretical	Practical	
1	01	Design of Heat System	2	---	2
2	02	Cutting Processes	2	2	3
3	03	Renewable Energy	2	2	3
4	04	Metal Forming Processes	2	---	3
5	05	X-Ray and Electronic Microscopy	2	---	2
6	06	Vibration	2	---	2
7	07	English Language	2	---	2
		Total	14	4	17