Ministry of Higher Education of Iraq
University of Technology
Electromechanical Engineering Department

Electromechanical Engineering Department

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Historical Review:

The beginnings Were in 1960 when the (High Industrial Institute) was established .one of its aims was to prepare a faculty members in region of industry and technical trainers.

In 1973 – 1974 electrical and mechanical branches were Established, Building branch was established in 1977 and closed in 1980.

The Department was named as (Industry Faculty Members) who teach the technology subjects as well as Educational subjects .On 1993-1994 the Department was renamed as (Technical Education Department) . High studies were begun as high diploma in (Industrial Education Technology).

On 1977 – 1978, Electrical, Machines specialty master studies were begun, while Building specialty master studies were begun in 1980-1981.

Ph.D. Studies were begun in 1992-1993 for Electrical and Mechanical specialty only.

A Special High Diploma Studies in (Computer Aided Engineering Education) started in 1999-2000.

In 2007 – 2008 , the department was renamed as (Electromechanical Engineering Department) which is considered to be one of the modern engineering specialty .

It compounds Electrical & Mechanical Engineering Studies.

This new discipline has a great necessity in most industrial regions in Iraq like power generation stations.

Vision , Mission and Aims

VISION :-

We seek to make the Department to be a distinguished one in region of Electromechanical engineering among the world's solid universities.

Mission :

Preparing specialists in region of Electromechanical engineering at the level of distinct knowledge to keep abreast of the developments of rapid development in this area and commitment to the ethics of the profession in region of work and society.

Aims:

1- Graduation of highly qualified engineers in the field of electromechanical engineering capable of developing their skills in the field of engineering knowledge and are able to use them in the field of specialized electromechanical applications and in design and use of specialized equipment.

2- Support scientific research centers and industrial engineering projects with qualified cadres in its field of competence

3- Enhancing communication with engineering, scientific, local and international institutions.

4- Working hard to enable graduates to apply the information gained during the study to solve engineering problems and conduct scientific experiments at the design and maintenance stage.

5- Recognize the skills necessary to participate in the task forces to carry out the engineering tasks entrusted to them.

6- Providing the community with specialists, experts and scientific consultants in the field of electromechanical engineering .

7- Determine the work environment in which there is a presence of an engineering field.

Council Of Department

Dr. Hosham Salim Anead	**Head of Electromechanical Engineering Department**
Dr. Muhannad Zedan Khalifa	**Scientific Deputy**
Dr. Abdul Jabbar Owaid H.	**Administrative Deputy.**
Prof .Dr. Hussain J. M. AL-Alkawi	**Head of Electromechanical Engineering Systems Branch**
Dr.Talib Z. Faraj	**Head of Energy and renewable Energies Engineering Branch**
Dr. Sameir Abd AL Khalik Aziez	**Head of Navigation and Guidance Engineering Branch**
Prof .Dr.Jalal Mohamed Jalil	**Head of Scientific Committee**
Dr. Abdullateef Ahmed Jadaala	**Representative of Faculty members**
Dr. Hashim Abd Hussien	**A faculty member**
Dr. Manal Kadhim Odah	**Decider of Department**
Dr. Ahmed Hameed Rija	**Head of Division of Quality and University**
Dr. Ibtisam Ahmed Hasan	**A faculty member**

Electromechanical Engineering Department Branches

1-Electromechanical Engineering Systems Branch:

Was founded in 2007-2008 within the branches of Department of Electromechanical Engineering at the University of Technology, it is the first engineering specialization in electromechanical systems region at the level of Iraqi universities to meet the needs of future and future of national industry and its developments through the preparation of highly qualified engineers able to design , implement and operate control systems and field work In factories, production lines, distribution of electrical power, control and inspection laboratories and maintenance lines for locomotives, ships, aircraft and other heavy equipment.

First Year – Electromechanical Engineering

ode	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	English Language	2	-	-	2	-	-	4
2	Computer Science	1	1	1	1	1	1	3
3	Mathematics I	4	-	4	4	-	4	8
4	Workshop	-	6	-	-	6	-	4
5	Physics	4	-	-	4	-	-	8
6	Fundamentals of Electrical Engineering	2	1	-	2	1	-	5
7	Engineering and Mechanical Drawing	-	3	-	-	3	-	2
8	Engineering materials and Nanotechnology	2	-	-	2	-	-	4
9	Engineering Mechanics	1	1	1	1	1	1	3
Summation		16	12	2	16	12	2	41

Number of week's hours

First term	Second Term
30	30

Second Year – Electromechanical Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Human Rights and Freedom and democratic	1	-	-	1	-	-	2
2	Computer Programming	2	1	-	2	1	-	5
3	Mathematics II	4	-	-	4	-	-	8
4	Electrical Circuits	2	-	-	2	-	-	4
5	Electrical Machines	2	1	1	2	1	1	5
6	Thermodynamics and Fluid Mechanics	2	1	1	2	1	1	5
7	Electronic	1	1	1	1	1	1	3
8	Strength of Materials	2	1	-	2	1	-	5
9	Electrical Measurements & Devices	2	1	-	2	1	-	5
Summation		18	6	3	18	6	3	42

Number of week's hours

First term	Second Term
27	27

Third Year – Electromechanical Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Industrial Engineering	2	-	-	2	-	-	4
2	Engineering and Numerical Analysis	4	-	-	4	-	-	8
3	Vibration and Control System Theory	2	1	1	2	1	1	5
4	Theory of Machines	2	1	1	2	1	1	4
5	Communications	2	1	1	2	1	1	5
6	Synchronous & Special Machines	2	-	-	2	-	-	4
7	Heat Transfer and Hydraulic Systems	1	1	1	1	1	1	3
8	Power Systems	1	-	1	1	-	1	2
9	Electromechanical Design	2	-	1	2	-	1	4
Summation		18	4	6	18	4	6	40

Number of week's hours

First term	Second Term
28	28

Fourth Year – Electromechanical Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Electromechanical Devices	2	1	-	2	1	-	5
2	Computer Aided Design And Manufacturing (CAD/CAM)	2	2	-	2	2	-	6
3	Air Condition & Refrig.	2	1	-	2	1	-	5
4	Automation and Control	2	-	1	2	-	1	4
5	Signal and Systems	2	-	-	2	-	-	4
6	Power Electronics	2	1	1	2	1	1	5
7	Microprocessors and Microcontrollers	2	1	-	2	1	-	5
8	Project	-	4	-	-	4	-	3
Summation		14	10	2	14	10	2	37

Number of week's hours

First term	Second Term
26	26

2-Energy and Renewable Energies Engineering Branch

The Energy Engineering Branch was established in 2007-2008 at the Department of Electromechanical Engineering / University of Technology. It is the first engineering specialization at the level of the Iraqi universities concerned with the study of energy technologies like generation, conversion, transportation, conservation and exploitation in all its regions. As a result of the labor market requirements and the high interest in renewable energies, Energy Engineering Branch was developed to Renewable Energies one to make its graduates have the ability to design, implement, operate and maintain power plants in various sources of operation as well as renewable energy plants and associated systems which are generation systems, transmission and distribution systems . The beginning of this specialization was in 2014-2015.

First Year Energy & Renewable Energies Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	English Language	2	-	-	2	-	-	4
2	Computer Science	1	1	1	1	1	1	3
3	Mathematics	4	-	-	4	-	-	8
4	Workshop	-	6	-	-	6	-	4
5	Physics	4	-	-	4	-	-	8
6	Fundamentals of Electric Engineering	1	1	1	1	1	1	3
7	Engineering & Mechanical Drawing	-	3	-	-	3	-	2
8	Thermodynamics	1	1	1	1	1	1	3
9	Engineering Mechanics	1	1	-	1	1	-	3
Summation		14	13	3	14	13	3	38

Number of Week's Hours in Course

First Course	Second Course
30	30

Second Year Energy& Renewable Energies Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Human Rights /Freedom and Democracy	1	-	-	1	-	-	2
2	Advanced Programming	1	1	1	1	1	-	3
3	Advanced Mathematics	4	-	-	4	-	-	8
4	Devices & Measurement	1	1	1	1	1	1	3
5	Electrical and Electronic circuit	2	1	1	2	1	1	5
6	Electrical Machines	1	1	1	1	1	1	3
7	Heat Transfer *	2	1	1	2	1	1	5
8	Fluid Mechanics *	2	1	1	2	1	1	5
9	Strength of Material and Vibration	1	1	1	1	1	1	3
Summation		15	7	7	15	7	6	37

Number of Week's Hours in Course

First Course	Second Course
29	29

Third Year Energy& Renewable Energies Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Industrial Engineering	1	-	1	1	-	1	2
2	Application of Advanced Computer	1	1	1	1	1	1	3
3	Control Systems	1	1	1	1	1	1	3
4	Combustion and Air pollution *	1	1	1	1	1	1	3
5	Fluid Machinery	2	1	1	2	1	1	5
6	Power plant	1	1	1	1	1	1	3
7	Numerical and Engineering Analysis	4	-	-	4	-	-	8
8	Power systems	1	-	1	1	-	1	2
9	Renewable Energy(I)	2	1	1	2	1	1	5
Summation		14	6	8	14	6	8	34

Number of Week's Hours in Course

First Course	Second Course
28	28

Fourth Year Energy& Renewable Energies Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Electctromechanical Equipment	1	1	1	1	1	1	3
2	Power system Analysis	2	1	-	2	1	-	5
3	Energy Efficiency and management	1	1	1	1	1	1	3
4	Nuclear Power Plants	2	-	1	2	-	1	4
5	Power Electronic & Electrical Drives *	2	1	1	2	1	1	5
6	Power System Operation and maintenance	2	-	1	2	-	1	4
7	Renewable Energy(II)	2	1	1	2	1	1	5
8	Project	-	4	-	-	4	-	3
Summation		12	9	6	12	9	6	32

Number of Week's Hours in Course

First Course	Second Course
27	27

3-Navigation and Guidance Engineering Branch:

was founded at the academic year 2014-2015 as the first engineering specialty at the country level in navigation and guidance engineering region in order to keep up with the rapid development taking place in the engineering science systems, navigation, tracking and guidance via satellite uses and its applications extensive land, sea and air to meet the current and future needs of navigation devices wide spread and developments through the preparation of highly qualified engineers who are able to design, implement, maintain and operate various navigational systems at field work at airports , ports , aircraft, locomotives, ships, coastal and high seas vehicles and the development of mobile devices and other devices.

First Year: Navigation and Guidance Engineering

No.	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	English Language	2	-	-	2	-	-	4
2	Computer Science	1	1	1	1	1	1	3
3	Mathematics (I)	4	-	-	4	-	-	8
4	Workshop	-	6	-	-	6	-	4
5	Fundamental of Physics and Nanotechnology	4	-	-	4	-	-	8
6	Fundamental of Electrical Circuit	1	1	1	1	1	1	3
7	Engineering Drawing	-	3	-	-	3	-	2
8	Navigation Theory	2	-	1	2	-	1	4
9	Engineering Mechanics	1	1	-	1	1	-	3
Summation		15	12	3	15	12	3	39

Number of week's hours

First term	Second Term
30	30

Second Year: Navigation and Guidance Engineering

No.	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Human Rights / Freedom and Democracy	1	-	-	1	-	-	2
2	Computer Programming	2	1	-	2	1	-	5
3	Mathematics (II)	4	-	-	4	-	-	8
4	Electrical and Electronic Measurements	2	1	1	2	1	1	5
5	Electrical and Electronic Circuits	2	1	1	2	1	1	5
6	Navigation Systems (I)	2	-	1	2	-	1	4
7	Aerodynamics and Flight Theory	1	1	1	1	1	1	3
8	Control and Guidance (I)	2	1	1	2	1	1	5
9	Strength of Material	1	1	1	1	1	1	3
Summation		17	6	6	17	6	6	40

Number of week's hours

First term	Second Term
29	29

Third Year: Navigation and Guidance Engineering

Code	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	Machines Design	2	-	1	2	-	1	4
2	Numerical Analysis	4	-	-	4	-	-	8
3	Control and Guidance (II)	2	1	-	2	1	-	5
4	Hydraulic Engineering	1	1	1	1	1	1	3
5	Communications	2	1	1	2	1	1	5
6	Digital Electronics	2	1	-	2	1	-	5
7	Navigation Systems (II)	2	1	-	2	1	-	5
8	Radar Theory	2	-	1	2	-	1	4
9	Vibration and Noise	1	1	1	1	1	1	3
Summation		18	6	5	18	6	5	42

Number of week's hours

First term	Second Term
29	29

Fourth Year: Navigation and Guidance Engineering

No.	Subject	Weeks Hours						Units
		First term			Second term			
		Theo.	Prac.	Tut.	Theo.	Prac.	Tut.	
1	CAD/CAM	2	1	-	2	1	-	5
2	Robotics and Automation	2	-	1	2	-	1	4
3	Radar Systems	2	1	1	2	1	1	5
4	Navigation Instruments Design	2	1	1	2	1	1	5
5	Computer Aided Navigation	2	1	-	2	1	-	5
6	Reliability Engineering	2	-	1	2	-	1	4
7	Structural Stability	2	-	1	2	-	1	4
8	Digital Signal Processing (DSP)	2	-	1	2	-	1	4
9	Project	-	4	-	-	4	-	3
Summation		16	8	6	16	8	6	39

Number of week's hours

First term	Second Term
30	30

4- About remotely piloted aircraft engineering

The Branch of Unmanned Aircraft Systems Engineering was established in 2018-2019 in the Department of Electromechanical Engineering at the University of Technology. This specialization is unique in Iraq. The Branch of Unmanned Aircraft Systems Engineering was founded to meet the needs of the labor market and to pursuit the developments in various international universities. The graduates can work in different governmental ministries, such as Ministry of Defense and Ministry of Interior. In addition, the graduates can serve in other different governmental establishment, such as the Ministry of Transport / Iraqi Airways, the Directorate of the Air Force, and the Directorate of Civil Defense. Further, they can be employed in Ministries of Agriculture and Oil. After four years of study, the graduates will have high qualifications and knowledge in the techniques of design and manufacture of various kinds of aircraft and their various uses. This will enable them to work in the design and implementation of vehicles and various aircraft and work in the fields of manufacture and maintenance of aircraft, and control stations and ground guidance of different size and applications of aircrafts.

5-About Oil and Gas Equipment Branch:

The Oil and Gas Equipment Engineering Branch has been created in order to keep pace with the rapid development in engineering sciences related to oil and gas production, transportation and storage equipment in addition to modern and innovative control methods and techniques that contribute effectively to support the economic side in the country, as this specialty represents a scientific edifice added to the achievements of University of Technology.

Aim of the Branch:

Preparing applied engineers in the field of engineering oil and gas production, transportation and storage equipment at a distinguished level of knowledge and engineering to support the oil sector in a dynamic and effective way.

Branch Objectives:

1- Graduating engineering cadres with high scientific and practical competence in the field of engineering equipment for oil and gas, which represents the mainstay of oil installations.
2- Graduating qualified engineers in the field of designs and control of oil equipment with a high scientific background in the field of equipment energy efficiency and environmental protection from pollution.
3- Supplying state institutions related to the above specialization with applied engineers specialized in using oil and gas equipment, developing and maintaining them, and how to control technical problems in them.
4- Supporting scientific and research centers with experts and consultants working in this vital and important field.

Laboratories of Department :

1-Computer Lab..1

2-Electrical Machines Lab. (AC-DC)

3-Polution & Combustion Lab

4-Fluid Mechanics Lab

5-Power Electronic Lab

6-Renewable Energy Lab.

7-High Voltage Engineering Lab.

8-Power Plants Lab.

9-Hydrulic System Lab.

10-Electromechanical Devices Lab.

11-Autocad Lab.

12-Control Lab.

13-Engineering Materials Lab.

14-Digital Electronic Lab.

15-Electrical Fundamentals Lab.

16-Strength Of Materials Lab.

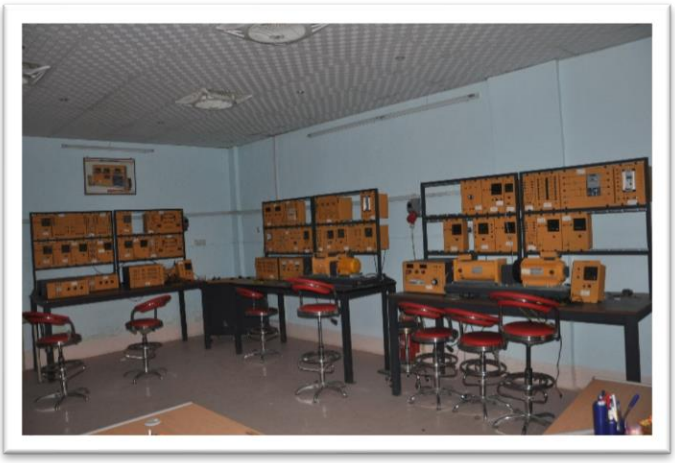
17-Communication Lab.

18-Electronic Lab.

19-Electrical Measurement Lab.

20-Engineering Mechanics Lab.

21-Airconditioing & Refrigeration Lab.



22-Machines Theory Lab.

23-Vibrations Lab.

24-Micrcomputer Lab.

25-Synchronic Machines Lab.

26-Signals & Systems Lab.

27-Microprocessors & Microcontrollers Lab.

28-Thermodynamic Lab.

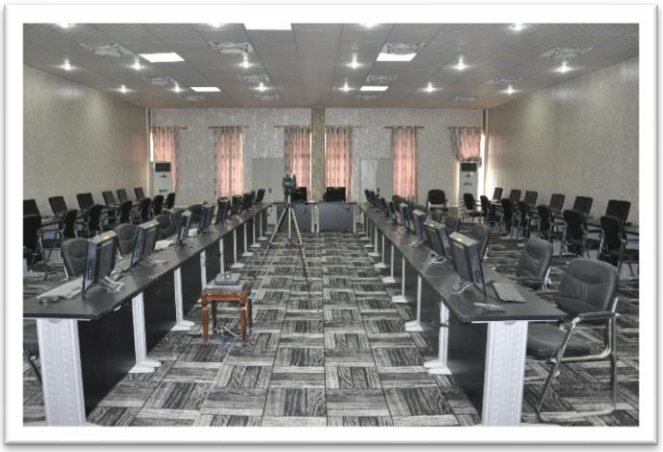
29-Navigation Systems Lab.

30-Heat Transfer Lab.

31-Aerodynamics Laboratory.

32-Autopilot (unmanned Aircraft) Laboratory

33- Unmanned Aircraft manufacturing workshop



Postgraduate:

The postgraduate in electromechanical engineering department have been introduced immediately after the graduation of the first session in 2012-2013 during the opening of the master's degree in energy engineering and electromechanical systems engineering, was also started within the duration of a calendar two years by the use of courses scheme and followed by the preparation an applied thesis in the field of scientific competence as a part of the certification requirements.

After nearly five years of opening the postgraduate studies in electromechanical engineering department, the higher diploma study in the electromechanical systems engineering. In order to keep up with scientific development accelerated globally and catch up with the rapid expansion of the circumferences of science and all the innovations that counting within the field of electromechanical engineering, will be introduced doctoral study has been established in 2018-2019 in line with the country's need for staff in the scientific disciplines in electromechanical engineering. These studies are also based on the style of courses for one academic year, followed by a comprehensive exam (written &| oral). Once passing this examination, the registry to prepare the specialized thesis in one of scientific disciplines in electromechanical engineering will be required over the two years of research.

The postgraduate studies in the electromechanical engineering department were consequently enlarged to follow the scientific method of cooperation and joint supervision with the professionals and researchers in the petroleum and industrial fields and also with the Ministry of Electricity with the aim of transformation different knowledge and experience from the academic site of the University to the scientific application fields and vice versa.

MSc. Course of Electromechanical Engineering
Energy Engineering
First Semester

Course No.	Name of the Course	Theoretical		Practical		Credits
		Weekly Hours	Unit	Weekly Hours	Unit	
MSEM 101	Advanced Numerical and Engineering Analysis	2	2	-	-	2
MSEM 106	Digital Control System	2	2	-	-	2
MSEM 201	Energy Conversion & Utilization	2	2	3	1	3
MSEM 203	Convective and Processes Heat Transfer	2	2	-	-	2
MSEM 208	Power System Stability	2	2	-	-	2

MSEM 111	English language(I)	1	1	-	-	1
	Total	11	11	3	1	12

Second Semester

Course No.	Name of the Course	Theoretical		Practical		Credits
		Weekly Hours	Unit	Weekly Hours	Unit	
MSEM 102	Measurement Techniques	2	2	-	-	2
MSEM 204	Computational Fluid Dynamics	2	2	3	1	3
MSEM 205	Power Plant Engineering	2	2	-	-	2
MSEM 206	Selected Topic in Thermal Engineering	2	2	-	-	2
MSEM 207	Power System Control	2	2	-	-	2

MSEM 112	English language (II)	1	1	-	-	1
	Total	11	11	3	1	12

MSc. Course of Electromechanical Engineering
Electromechanical Systems Engineering
First Semester

Course No.	Name of the Course	Theoretical		Practical		Credits
		Weekly Hours	Unit	Weekly Hours	Unit	
MSEM 101	Advanced Numerical and Engineering Analysis	2	2	-	-	2
MSEM 106	Digital Control System	2	2	-	-	2
MSEM 103	Industrial Electronics	2	2	3	1	3
MSEM 104	Microelectromechanical Systems	2	2	-	-	2

MSEM 108	Machine Design System and Advanced Engineering Materials	2	2	-	-	2
MSEM 111	English language(I)	1	1	-	-	1
	Total	11	11	3	1	12

Second Semester

Course No.	Name of the Course	Theoretical		Practical		Credits
		Weekly Hours	Unit	Weekly Hours	Unit	
MSEM 102	Measurement Techniques	2	2	-	-	2
MSEM 107	Computer Aided Design and Manufacturing	3	3	-	-	3
MSEM 109	Advanced Electrical Machines	2	2	-	-	2
MSEM 105	Vibration Control	2	2	-	-	2
MSEM 110	Robotics Design & Control	2	2	-	-	2

MSEM 112	English language(II)	1	2	-	-	1
	Total	11	11	3	1	12

Higher Diploma Of Electromechanical Engineering
Electromechanical Systems Engineering

First Semester

	Name of the Course	Weekly/Hours	Credits
1	English Language (I)	1	1
2	Electrical Control	3	3
3	Mechanical Vibrations & Noise	2	2
4	Electrical Machines	2	2
5	Advanced Elasticity	2	2
6	Engineering Analysis	2	2

Total Units = 12

Second Semester

	Name of the Course	Hours	Credits
1	English Language (II)	1	1
2	Electronics	2	2
3	CNC Machines	3	3
4	Electromechanical Systems Design	2	2
5	Numerical Analysis	2	2
6	Project	2	2

Total Units = 12

البحوث المنشورة ضمن مستوعبات سكوبس1/9/2019-1/9/2020					
ت	أسم الباحث	القسم	اسم البحث	اسم المجلة	Impact factor

or Cite Score					
CS = 0.53	IOP Conferences series : Materials Science and Engineering	Control on temperature of hybrid Nano fluid in evacuated tube solar collector using smart curtain	الهندسة الكهروميكانيكية	أ.د هشام سليم عنيد أ.م.د خالد فيصل سلطان	1
CS = 0.53	IOP Conferences series : Materials Science and Engineering	Utilizing the computational intelligence Technique for boiler pressure controlling	الهندسة الكهروميكانيكية	أ.د هشام سليم عنيد أ.م.د خالد فيصل سلطان	2
CS = 0.53	IOP Conferences series : Materials Science and Engineering	Adaptive control using NARMA-L2 Model and Electric Circuit for Condenser of thermal power plant	الهندسة الكهروميكانيكية	أ.د هشام سليم عنيد أ.م.د خالد فيصل سلطان	3
CS = 0.53	IOP Conferences series : Materials Science and Engineering	An experimental investigation on the effect of the hybrid Nano fluid AL2O3/distilled water on the thermal efficiency of evacuated tube solar collector	الهندسة الكهروميكانيكية	أ.د هشام سليم عنيد أ.م.د خالد فيصل سلطان	4
CS = 0.53	IOP Conferences series : Materials Science and Engineering	Theoretical and Experimental Analysis of Photovoltaic Module Characteristics under Clouds Effects	الهندسة الكهروميكانيكية	أ.د هاشم عبد حسين أ.م.د علي حسين نعمان	5
CS = 2.7	Iaes: International Journal of Power Electronics and Drive Systems, **ISSN:2088-8694**	Theoretical and Experimental Analysis of Photovoltaic Module Characteristics under Different Partial Shading Conditions	الهندسة الكهروميكانيكية	أ.د هاشم عبد حسين أ.م.د علي حسين نعمان م.م زهراء سلمان داوود	6
CS = 0.53	IOP Conferences series : Materials Science and Engineering	An Experimental Investigation of Performance of Hybrid PV/t-PCM System with Control System	الهندسة الكهروميكانيكية	أ.د هاشم عبد حسين أ.م.د علي حسين نعمان	7
CS = 0.53	IOP Conferences series : Materials Science and Engineering	Improving the Performance of the Pump Station Line Transportation System Using PLC Control and Remote Monitoring	الهندسة الكهروميكانيكية	أ.د هاشم عبد حسين	8
CS = 0.53	ICEMEA-2020 IOP Conf. Series: Materials Science and Engineering	Design and implementation of a single-side flat synchronous linear motor	الهندسة الكهروميكانيكية	أ.د جمال عبدالكريم محمد أ.د فرج محل محمد	9
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CS = 0.53	IOP Conferences series : Materials Science and Engineering	Influence of Cryogenic Temperature (CT) on Tensile Properties and Fatigue Behavior of 2024-A12O3 Nanocomposites	الهندسة الكهروميكانيكية	أ.د حسين جاسم محمد	12
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87	أ.د حسين جاسم محمد العلكاوي د.هدى اكرم الصالحي	الهندسة الكهروميكانيكية	Mechanical and war behavior of AA7075 aluminum matrix composites reinforced by Al2O3 nanoparticles	Nanocomposites **E-ISSN:2055-0332**	CS = 3.6
88	م. عبد المنعم رعد عبد المنعم أ.د. هاشم عبد حسين	الهندسة الكهروميكانيكية	Enhancing PV cells electrical efficiency using phase change material with copper foam matrix and multi-walled carbon nanotubes as passive cooling method	Renewable Energy **ISSN/eISSN:0960-1481**	CS= 11.2 IF = 6.274
89	م.د. حسين سعد عبد م. عبد المنعم رعد عبد أ.م.د. محمد حسان جبل	الهندسة الكهروميكانيكية	Numerical investigation of mixture generation due to different inlet and outlet positions	International Journal of Low-Carbon Technologies **ISSN:1748-1317**	CS = 2.4 IF = 1.43
90	م.د نصير حامد فرهود	الهندسة الكهروميكانيكية	Experimental Investigation on the effects of glass fibre hybridization on the low velocity impact response Of filament wound carbon – based composite pipes	Polymers and polymer composites ISSN: 0967-3911	CS = 1.6 IF = 0.77
91	م.د. فاتن نعمان عبد الله	الهندسة الكهروميكانيكية	Uncertainty analysis of steady-state measurement with a hot-filament type calorimetric emissometer	International Journal of Heat and Mass Transfer **ISSN:0017-9310**	CS= 8.2 IF = 4.94
92	ا.د. رحيق اسماعيل ابراهيم	الهندسة الكهروميكانيكية	Energy analysis and phase inversion modeling of two-phase flow with different additives	Ain Shams Engineering Journal **ISSN: 2090-4479**	CS = 4.6 IF = 1.949
93	م. أحمد حسن خضر	الهندسة الكهروميكانيكية	Improve the performance of a solar air heater by adding aluminum chip, paraffin wax, and nano-SiC	Case Studies in Thermal Engineering **ISSN:2214-157X**	CS=4.6 IF = 3.380
94	م.د. اياد كاظم خليف	الهندسة الكهروميكانيكية	Measurement of global and direct normal solar energy radiation in Seri Iskandar and comparison with other cities of Malaysia	Case Studies in Thermal Engineering **ISSN:2214-157X**	CS = 4.6 IF 3.380
95	أ.م.د. نزهت سعيد عبد الرزاق	الهندسة الكهروميكانيكية	An efficiency, secured and reversible video steganography approach based on lest significant	Journal of Cellular Automata, Vol.16, No.17, 4/2020. **ISSN:1557-5969**	CS= 1.4 IF = 0.776
96	م.د. حيدر قاسم علوان	الهندسة الكهروميكانيكية	Heat and mass transfer during ethanol evaporation on the walls of a flat channel	International Journal of Heat and Mass Transfer.**ISSN:0017-9310**	CS = 8.2 IF = 4.947
97	أ.م. رياض عدنان كاظم	الهندسة الكهروميكانيكية	High Sensitive D – Shaped Optical Fiber Surface Plasmon Resonance Refractive Index Sensor Based on Ag-α-Fe2O3 Grating	IEEE Sensors Journal **ISSN : 1530-437X**	IF = 3.076
98	م.عبد المنعم رعدعبد المنعم أ.م.د. محمد حسان جبل أ.د. هاشم عبد حسين	الهندسة الكهروميكانيكية	Analysis of Energy and Exergy for the Flat Plate Solar Air Collector with Longitudinal Fins Embedded in Paraffin Wax Located in Baghdad Center	International Journal of Heat and Technology. ISSN: 0392-8764	CS = 3.3 IF = 0.669
99	أ.م.د. ابتسام احمد حسن	الهندسة الكهروميكانيكية	Numerical Investigation of Free Convection Heat Transfer from Two-Dimensional Rectangular Enclosure with Discrete Isothermal Heating from Bottom Side	International Journal of Heat and Technology, Vol. 37, 12/2019.ISSN:0392-8764	CS = 3.3 IF = 0.669

CS = 2 IF = 0.94	Evolutionary Intelligence **ISSN:1864-5909**	Enhanced Forensic Speaker Verification Performance Using the ICA-EBM Algorithm Under Noisy and Reverberant Environments	الهندسة الكهروميكانيكية	م.د احمد كامل حسن	100
CS = 1.2 IF = 0.32	Composite: mechanics, computations, applications **ISSN: 2152-2057**	Experimental characterization of compression performance of carbon-basalt hybrid filament wound pipes before and after impact	الهندسة الكهروميكانيكية	م.د نصير حامد فرهود	101