

Tikrit University

جامعة تكريت  
كلية هندسة الشرجاط



*First Cycle – Bachelor's degree (B.Sc.) – Mechanical Engineering*

بكالوريوس هندسة ميكانيكية



## جدول المحتويات | Table of Contents

1. Mission & Vision Statement	بيان المهمة والرؤية
2. Program Specification	مواصفات البرنامج
3. Program (Objectives) Goals	أهداف البرنامج
4. Program Student learning outcomes	مخرجات تعلم الطالب
5. Academic Staff	الهيئة التدريسية
6. Credits, Grading and GPA	الاعتمادات والدرجات والمعدل التراكمي
7. Modules	المواد الدراسية
8. Contact	اتصال

### 1. Mission & Vision Statement

#### *Vision Statement*

*The Department of Engineering will provide programs of the highest quality to produce globally competent engineers who can address challenges of the millennium to achieve sustainable socio-economic development. Our vision is to be innovators in electrical engineering education and research to spearhead sustainable and environment-friendly economic development.*

#### *Mission Statement*

*The Mission of the Bachelor of Mechanical Engineering Programme is to inculcate students with essential knowledge, skills and values required for sustainable design, development and innovation in the field of mechanical engineering for socio-economic growth and enabling them for lifelong learning to contribute towards interdisciplinary engineering solutions.*

### 2. Program Specification

Programmer code:	BSc-ME	ECTS	240
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<b>Duration:</b>	4 levels, 8 Semesters	<b>Method of Attendance:</b>	Full Time
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The Mechanical Engineering program provides a foundation for work in the fields of mechanics, design, heat transfer. Topics specific to Mechanical Engineering are studied in specialized focus areas in the third and fourth levels.

At level 1, students will develop their essential mathematical and analytical skills and knowledge by studying four core modules: Engineering Math, Basic of Electrical Engineering, Computer programming. Students contextualize and develop their learning further through the following modules, Electronic physics, Engineering mechanics, Engineering Drawings and other basic learning modules. Where possible and appropriate, students are encouraged to draw upon their learning and experience in the workplace to contextualize their learning.

### **3. Program Goals**

The aim of the Mechanical Engineering Program is to train students who are willing to become Engineers to become sound in the field. The trained students should be confident, self-reliant and be able to execute what they have learnt and strive to be the best among equals and to be able to do this independently. Other goals are:

1. To produce graduates in Mechanical Engineering who are registerable with professional bodies and have a burning desire to excel in their chosen profession.
2. To provide a comprehensive education in Mechanical engineering that stresses scientific reasoning and problem solving across the spectrum of disciplines within electrical power system.
3. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of electrical engineering.
4. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques
5. To provide thorough training in written and oral communication of scientific information.

### **4. Student Learning Outcomes**

Student Learning Outcomes describe the knowledge, skills and dispositions that students have learned from completing the Engineering Technology program. Each student learning outcome is mapped to a program education objective, which prepares graduates to attain the program educational objectives within a few years of graduation.

#### ***Outcome 1***

Students will be able to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities.

#### ***Outcome 2***

Students will be able to select and apply principles of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.

#### ***Outcome 3***

Students will be able to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.

***Outcome 4***

Students will be able to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.

***Outcome 5***

Students will be able to function effectively as a member or leader on a technical team.

***Outcome 6***

Students will be able to identify, analyze, and solve broadly-defined engineering technology problems.

***Outcome 7***

Students will be able to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.

***Outcome 8***

Students will be able to recognize the need for engage in lifelong learning to maintain and enhance their knowledge of the discipline.

***Outcome 9***

Students will be able to identify contemporary issues encountered in the engineering technology profession related to diversity and the impact of technology decision on a global society.

***Outcome 10***

Students will be able to explain the ethical and professional responsibilities associated with the practice of engineering technology.

***Outcome 11***

Students will be able to demonstrate the importance of quality, timeliness and continuous improvement to the field of engineering technology.

## 5. Academic Staff

الاي ميل	Orcid	رابط كوكل سكولر	رابط صفحة سكوبس	الشهادة	الاسم الثلاثي بالانكليزي	الاسم الثلاثي بالعربي	ت
<a href="mailto:Abdullateef.aljad@tu.edu.iq">Abdullateef.aljad@tu.edu.iq</a>	orcid.org/0000-0001-9546-8746		<a href="https://www.scopus.com/authid/detail.uri?authorId=56971319500">https://www.scopus.com/authid/detail.uri?authorId=56971319500</a>	دكتوراه	Prof.Dr. Abdullateef Ahmed Jadallah	أ.د. عبد اللطيف احمد جاد الله	1
Ahmdaljasm1970@gmail.com	<a href="http://orcid.org/0009-0009-0427-9882">http://orcid.org/0009-0009-0427-9882</a>	Ahmed Jasim	Ahmed Jasim	ماجستير	Ahmed Jasim Shihab	احمد جاسم شهاب	2
Aseockq.abdullah@gmail.com	<a href="http://orcid.org/0009-0002-3184-273x">http://orcid.org/0009-0002-3184-273x</a>	Abdulla Issa	Abdulla Issa	ماجستير	Abdullah issa subh	عبدالله عيسى صبح	3
<a href="mailto:nawras.adday21@tu.edu.iq">nawras.adday21@tu.edu.iq</a>	<a href="https://orcid.org/0009-0004-7851-2978">https://orcid.org/0009-0004-7851-2978</a>	<a href="#">Nawres Basheer Google Scholar</a>	Nawras Adai	ماجستير	Nawras Basheer Adday	نورس بشير عداي	4
<a href="mailto:mubarak@tu.edu.iq">mubarak@tu.edu.iq</a>	<a href="https://orcid.org/0000-0002-4368-5594">https://orcid.org/0000-0002-4368-5594</a>	Mubarak Oglah	Mubarak Oglah	دكتوراه	Mubarak hamad oglah	مبارك حمد عكلة	5
		Ahmed Kais	Ahmed Kais	دكتوراه	Ahmed Kais Abdulla	احمد قيس عبدالله	6
		Muhanad Kamel	Muhanad Kamel	دكتوراه	Muhanad Kamel	مهند كامل	7
		Ahmed hasan	Ahmed hasan	ماجستير	Ahmed hasan gazalat	احمد حسن غزالات	8
		Harith Ali	Harith Ali	دكتوراه	Harith Abdulla Ali	حارث عبدالله علي	9
		Abdulrazak Muhammed Salih	Abdulrazak Muhammed Salih	دكتوراه	Abdulrazak Muhammed Salih	عبدالرزاق محمد صالح	10

## 6. Credits, Grading and GPA

### Credits

Tikrit University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

### Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

### Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$CGPA = [ (1st^{th} \text{ module score} \times ECTS) + (2nd^{th} \text{ module score} \times ECTS) + \dots ] / 240$$

Republic of Iraq- Ministry of Higher Education and Scientific Research										جمهورية العراق – وزارة التعليم العالي والبحث العلمي												
Tikrit University - College of Engineering - Al-Shirqat										جامعة تكريت - كلية الهندسة الشرقاط												
Bachelor's in Mechanical Engineering (First cycle)										درجة البكالوريوس في الهندسة الميكانيكية (الدورة الأولى)												
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25hr										أربع سنوات (ثمان فصول دراسية) - 240 وحدة اوروبية كل وحدة اوروبية = 25 ساعة												
Program Curriculum (2023 - 2024)										المنهاج الدراسي للعام (2023-2024)												
Lev .	Se m.	No	Code	Module Name	اسم المادة الدراسية	Lang uage	SSWL (hr/w)					Ex am	SS WL hr/s em	USS WL hr/se m	SW L hr/s em	EC TS	Mod ule Typ e	Prereq uisite Module (s) Code				
							C L	Le ct	L ab	P r	T ut								Se mn			
UG I	One	1	TKSHM E1100	Calculus I	الرياضيات I	English	4				2		3	93	57	150	6	B				
		2	TKSHM E1101	Engineering Workshop	الورش الهندسية	English	2					2	1	3	64	86	150	6	B			
		3	TKSHM E1102	Computer Science	علم الحاسوب	English	2						1	3	64	11	75	3	S			
		4	TKSHM E1103	Engineering Drawing	الرسم الهندسي	English	2					4		3	93	57	150	6	B			
		5	TKSHM E1104	Engineering Mechanics - Statics	ميكانيك هندسي - سكون	English	2						2	1	3	64	61	125	5	B		
		6	TKSHM E1105	Human Rights and Democracy	ديمقراطية وحقوق إنسان	Arabic	2								3	33	17	50	2	S		
		7	TKSHM E1106	Arabic	عربي	Arabic	2								3	33	17	50	2	S		
		Total							14							21	444	306	750	30		
								26														
	Two	T wo	1	TKSHM E1200	Calculus II	الرياضيات 2	English	4				1		3	78	72	150	6	B	MATH -101		
			2	TKSHM E1201	English Language 1	لغة إنكليزية 1	English	2							3	33	17	50	2	S		
			3	TKSHM E1202	Mechanical Drawing	رسم ميكانيكي	English	2					3		3	78	72	150	6	C	ENG-101	
			4	TKSHM E1203	Manufacturing Processes 1	عمليات تصنيع 1	English	2					1		4	49	76	125	5	C		
			5	TKSHM E1204	Thermodynamics	ديناميك الحرارة	English	2					1	1		4	64	61	125	5	B	
			6	TKSHM E1205	Electrical Engineering	هندسة كهربائية	English	2					1	1		4	64	86	150	6	S	
Total							14			6		3		24	366	384	750	30				
							25															
UG II	One	1	TKSHM E2100	Engineering Analysis	تحليلات هندسية	English	4				1		3	78	47	125	5	B	MATH -102			

		2	TKSHM E2101	Metallurgical Engineering	هندسة المعادن	English	2						1		1		4	64	61	125	5	C				
		3	TKSHM E2102	Fluid Mechanics 1	ميكانيك الموائع 1	English	2						1		1		4	64	61	125	5	B				
		4	TKSHM E2103	Computer Programming	برمجة الحاسوب	English	2						2				4	64	11	75	3	S				
		5	TKSHM E2104	Strength of Materials 1	مقاومة المواد 1	English	2						1		1		4	64	61	125	5	C	ENG-102			
		6	TKSHM E2105	Engineering Mechanics-Particle dynamics	ميكانيك هندسي - حركة جسيمات	English	3								1		3	63	62	125	5	B	ENG-102			
		7	TKSHM E2106	The Crimes of Baath Regime in Iraq	جرائم نظام البعث في العراق	Arabic	2										3	33	17	50	2	S				
Total							17							5		5		25	430	320	750	30				
												25														
Sem.	No	Code	Module Name	اسم المادة الدراسية	Language	SSWL (hr/w)					Exam	SSWL hr/s em	USSWL hr/se m	SWL hr/s em	ECTS	Module Type	Prerequisite Module (s) Code									
						C	L	P	T	S																
T wo	1	TKSHM E2200	English Language 2	لغة إنكليزية 2	English	2					3	33	17	50	2	S										
	2	TKSHM E2201	Engineering Mechanics - rigid dynamics	ميكانيك هندسي - حركة الاجسام الجامدة	English	2			1		1			3	63	87	150	6	C	MECH-205						
	3	TKSHM E2202	Strength of Materials 2	مقاومة مواد 2	English	2			1		1			4	64	86	150	6	C	MECH-203						
	4	TKSHM E2203	Fluid Mechanics 2	ميكانيك الموائع 2	English	2			1		1			4	64	86	150	6	C	MECH-201						
	5	TKSHM E2204	Applied Thermodynamics	ديناميك الحرارة التطبيقية	English	2			1		1			4	64	86	150	6	C	MECH-101						
	6	TKSHM E2205	Computer Aided Drawing	رسم معان بالاحاسوب	English	1			3					4	64	36	100	4	C	ENG-101						
	Total						11			7		4		22	352	398	750	30								
												22														
Lev .	Sem.	No	Code	Module Name	اسم المادة الدراسية	Language	SSWL (hr/w)					Exam	SSWL hr/s em	USSWL hr/se m	SWL hr/s em	ECTS	Module Type	Prerequisite Module (s) Code								
							C	L	P	T	S															
UG III	One	1	TKSHM E3100	Numerical Analysis	طرق عددية	English	2			1				4	48	52	100	4	B	MATH-201						
		2	TKSHM E3101	Engineering Management and Ethics	الادارة والأخلاقي الهندسية	English	2					1			3	48	52	100	4	S						



	3	TKSHM E3103	Theory of Machines	نظرية مكانن	English	3		1		1		4	79	71	150	6	C	MECH-205		
	4	TKSHM E3104	Heat Transfer conduction	انتقال حرارة - توصيل	English	2		1		1		4	64	86	150	6	C			
	5	TKSHM E3105	Gas Dynamic	ديناميك غازات	English	2		1		1		4	64	61	125	5	C	MECH-101 MECH-201		
	6	TKSHM E3106	Manufacturing Processes 2	عمليات تصنيع 2	English	2		1		1		4	64	61	125	5	C	MECH-103		
	Total						13		5		5		23	368	382	750	30			
											23									
Sem.	No	Code	Module Name	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module (s) Code		
						C	L	P	T	S	M									
Two	1	TKSHM E3200	Statistics and probability	احصاء واحتمالية	Arabic	2				1		3	48	27	75	3	S			
	2	TKSHM E3201	Machine Design 1	تصميم مكانن 1	English	2		1		1		4	64	86	150	6	C	MECH-207		
	3	TKSHM E3202	Heat Transfer (convection & radiation)	انتقال حرارة حمل واشعاع	English	2		1		1		4	64	86	150	6	C			
	4	TKSHM E3203	Internal Combustion Engines	مكانن احتراق	English	2		1		1		4	64	86	150	6	C	MECH-209		
	5	TKSHM E3204	Engineering Materials	مواد هندسية	English	2				1		3	48	77	125	5	C	MECH-204		
	6	TKSHM E3205	Energy Conversion	تحويل طاقة	English	2				1		3	48	52	100	4	C	MECH-101 MECH-201		
	Total						12		4		6		21	336	414	750	30			
											22									
Level	Sem.	No	Code	Module Name	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module (s) Code	
							C	L	P	T	S	M								
UG IV	One	1	TKSHM E4100	Engineering Graduation Project I	مشروع تخرج 1	English	2					3	33	67	100	4	C			
		2	TKSHM E3201	Mechanical Design 2	تصميم مكانن 2	English	2		1		1		4	64	86	150	6	C	MECH-306	
		3	TKSHM E3202	Vibration 1	اهتزازات 1	English	2		1		1		4	64	61	125	5	B	MECH-206	
		4	TKSHM E3203	Control 1	سيطرة 1	English	2		1		1		4	64	61	125	5	B	MATH-301	
		5	TKSHM E3204 TKSHM E3205	Principles of Air Conditioning	مبادئ تكييف الهواء	English	2		1		1		4	64	61	125	5	C	MECH-101 MECH-201	
		6	TKSHM E3206	Power Plant Engineering	هندسة محطات قدرة	English	2				1		3	48	77	125	5	C	MECH-209	
		Total						12		4		5		22	337	413	750	30		
											21									
Sem.	No	Code	Module Name	اسم المادة	Language	SSWL (hr/w)						Exam	SSWL	USSWL	SWL	ECTS	Module	Prerequisite		
						C	L	P	T	S	M									

				الدراسة		C	Lect	Lab	Pr	Tut	Semn		hr/sem	hr/sem	hr/sem		Type	Module (s) Code	
Two	1	TKSHM E4200	Engineering Graduation Project II	مشروع تخرج 2	English	2						3	33	67	100	4	C		
	2	TKSHM E4201	Control 2	سيطرة 2	English	2		1		1		4	64	61	125	5	C	MECH-404	
	3	TKSHM E4202	Heating, Ventilation and Air Conditioning (HVAC)	أنظمة التدفئة والتبريد والتكييف (HVAC)	English	2	Lectures Compensation												MECH-101
		TKSHM E4203							1		1		4	64	86	150	6	C	MECH-201
	4	TKSHM E4204	Vibration 2	اهتزازات 2	English	2			1		1		4	64	61	125	5	C	MECH-403
	5	TKSHM E4205	Electrical Machines	مكائن كهربائية	English	2			1		1		4	64	61	125	5	S	
	6	TKSHM E4206	Industrial Engineering	هندسة صناعات	English	3					1		3	63	62	125	5	C	
Total						13			4		5		22	352	398	750	30		
											22								
Structured SWL (hr/w) type			CL	Class Lecture	Module Type			B	Basic Learn Activity			Student Workload							
			Lect	Online Lecture				C	Core Learn Activity			Structured SWL							
			Lab	Laboratory				S	Support Learn Activity			Unstructured SWL							
			Pr	Practical Training				E	Elective Learn Activity										
			Tut	Tutorial															
			Semn	Seminar															

Prof.Dr. Abdullateef Ahmed Jadallah

Tel: 07718481477

E-Mail: [Abdullateef.aljad@tu.edu.iq](mailto:Abdullateef.aljad@tu.edu.iq)