

## Academic Program Description Form

**University Name:** Diyala

**Faculty/Institute:** Engineering

**Scientific Department:** Materials engineering


**Academic or Professional Program Name:** Bachelor of Materials engineering

**Final Certificate Name:** Bachelor of Materials engineering

**Academic System:** course

**Description Preparation Date:** 24-6-2024

**File Completion Date:** 24-6-2024

**Signature:** 

**Head of Department Name:**

Suha K. Shiheb

**Date:** 25/6/2024

**Signature:** 

**Scientific Associate Name:**

Jabbar Galtman

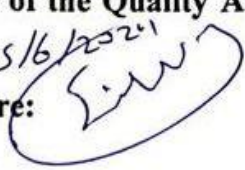
**Date:** 25/6/2024


**The file is checked by:** Salah N. Farhan

**Department of Quality Assurance and University Performance**

**Director of the Quality Assurance and University Performance Department:**

**Date:** 25/6/2024

**Signature:** 

  
**Approval of the Dean**

4

Prof. Dr. Anees A. Khadim

## 1. Program Vision

## 2. Program Mission

## 3. Program Objectives

## 4. Program Accreditation

## 5. Other external influences

6. Program				
ملاحظات *	النسبة المئوية	وحدة دراسية	عدد المقررات	هيكل البرنامج
	4.24 %	6	5	متطلبات المؤسسة
	14.20 %	20	9	متطلبات الكلية
				متطلبات القسم
Graduation Requirements	-	-	-	التدريب الصيفي
				أخرى

\* ممكن ان تتضمن الملاحظات فيما اذا كان المقرر أساسي او اختياري .

7. Program Description				
Credit Hours		Course Name	Course Code	Year/Level
<i>practical</i>	<i>theoretical</i>			

8. Expected Learning Outcomes of the Program	
	<b>Knowledge</b>
	<p>1) Understand and teach the student the principles of materials science and how to deal with materials.</p> <p>2) Enable students to obtain knowledge and understanding in working on materials and designing.</p> <p>3) Understand the student methods of forming parts of the materials and their interconnection.</p> <p>4) Enable students to obtain knowledge and understanding by designing everything related to materials engineering.</p> <p>5) Enable students to obtain knowledge and understanding on the diagnosis and examination of types of materials.</p> <p>6) Understand the student the basics of solving problems using materials in various industries .</p>
	<b>Skills</b>
	Explain the topics of the principles of materials engineering science by specialists in the subject with an emphasis on the use of the practical side as a basis for understanding and learning
	It provides them with the skills to solve practical problems related to the science of engineering various materials and solve technical problems in various fields of work.
	<b>Values</b>
	Enable students to think and analyze topics related to the engineering framework of materials engineering science
	Enable students to think and analyze topics related to practical problem solving

---

## 9. Teaching and learning strategies

---



---

## 10. Evaluation methods

---

## 11. Faculty

### Faculty Members

Preparation of the teaching staff		Special requirements/skills if any	Specialization		Academic Rank
lecturer	angel		special	year	

<b>Professional Development</b>
---------------------------------

<b>Orientation of new faculty members</b>
---

Faculty members are guided by holding periodic meetings and reverse review by the Scientific Committee for questionnaires obtained from students
--

<b>Professional development for faculty members</b>
---

The teaching staff is developed through the establishment of training or specialized courses, practical workshops and seminars with quarterly seminars. Progress is reviewed by evaluating the results of the subjects.
---

---

---

## 12. Acceptance Criterion

---

---

## 13. The most important sources of information about the program

--

---

---

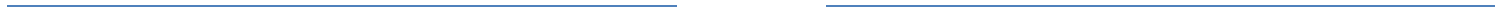
## 14. Program Development Plan

--

مخطط مهارات البرنامج

Learning outcomes required from the program												اساسي أم اختياري	Course Name	Course Code	Year/Level
القيم				المهارات				المعرفة							
4C	3C	2c	1C	4b	3b	2b	1b	A4	A3	A2	A1				
√	√	√	√	√	√	√	√	√	√	√	√	fundamental	Insulating materials	MAE 435	Fourth/First Semester

- Please tick the boxes corresponding to the individual learning outcomes from the program subject to evaluation



## Course Description Form

1. Course Name					
Insulating materials					
2. Course Code					
MAE 435					
3. Semester / Year					
First Semester / Fourth Year					
4. Date of preparation of the description					
24 / 6 / 2024					
5. Available attendance formats					
Came					
6. Number of Hours (Total) / Number of Units (Total)					
30					
7. Name of the course administrator (if more than one name is mentioned)					
Name: A.md. Saeb Diab Alwan Email:saib_Alwan_eng@uodiyala.edu.iq					
8. Course Objectives					
<ul style="list-style-type: none"> <li>Understand the principles of insulating materials</li> <li>How to learn applications used with insulating materials</li> <li>Learn the types of insulating materials</li> </ul>				Course Objectives	
9. Teaching and Learning Strategies					
Providing students with scientific, practical and self-skills that enable them to solve practical problems and deal with them with scientific concepts					Strategy
10. Course Structure					
Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	Week
Daily and monthly exams	PDF Lectures	Principle and theory of Insulating materials	The teacher explains the principle and theory of insulating materials and their importance	2	First
Daily and monthly exams	PDF Lectures	Principle properties of Insulating materials	Recognize the main principles of the properties of insulating materials	2	Second
Daily and monthly exams	PDF Lectures	Classification of Insulating materials	Identify the classification of insulating materials and the difference between them	2	Third
Daily and monthly exams	PDF Lectures	Introduction to insulating materials	Identification of insulating materials	2	Fourth
Daily and monthly exams	PDF Lectures	Effect of frequency on dielectric constant, effect of temperature on polarization	recognize the effect of frequency on insulation constant and temperature on material polarization,	2	V
Daily and monthly	PDF Lectures	Ferroelectric materials ,paraelectric materials , hysteresis curve.	Identify ferroelectric substances and hysterical curve	2	Sixth



exams					
Daily and monthly exams	PDF Lectures	Pizelectricity, important requirements of good insulating materials	Identify the piezoelectric generator and its importance	2	Seventh
Daily and monthly exams	PDF Lectures	Frequency dependence of electronic polarization ,Ionic polarization	Effect of frequency on polarization types	2	Eighth
Daily and monthly exams	PDF Lectures	Dielectric loses, significance of the loss tangent, depending of the loss tangent on temperature and frequency	Recognize the importance and technique of the loss angle tangent property of insulating materials	2	Ninth
Daily and monthly exams	PDF Lectures	Frequency and temperature depending of the dielectric constant of polar dielectric properties of polymeric systems	Recognize insulating materials and the effect of frequency and temperature on them	2	X
Daily and monthly exams	Lectures PDF	Atomic origin of magnetism materials, magnetic permeability , magnetic susceptibility	Recognize magnetic permeability and magnetic vulnerability	2	eleven
Daily and monthly exams	PDF Lectures	Classification of magnetic materials	Classification of magnetic materials	2	Twelfth
Daily and monthly exams	PDF Lectures	Magnetization and Saturation, Domain theory of ferromagnetism, effect of temperature	recognize the theory of magnetic saturation and the effect of temperature,	2	Thirteenth
Daily and monthly exams	PDF Lectures	Hysteresis curves , Hard and Soft magnetic materials	recognize hysterical curves and hard and soft magnetic materials,	2	Fourteenth
Daily and monthly exams	PDF Lectures	Applications of magnetic materials	Magnetic Material Applications	2	Fifteenth

#### 11. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily

preparation and daily, oral and monthly exams  
editorial and reports .... etc

12. Learning and Teaching Resources	
Insulation materials science and application, SoLAs, 2014 The complete guide to electrical insulation, Megger, 2006 Radiation shielding for clinics and small Hospitals, Hanson G.,2013	Required textbooks (methodology, if any)
lectures provided by the subject teacher and Books available in the college library	Main references (sources)
All sober scientific journals related to the principles of insulation materials	Recommended supporting books and references (journals, reports..)
Useful and convenient websites for insulation materials	Electronic References, Websites