

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:

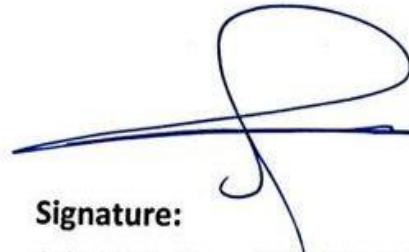


Head of Department Name:

Suha K. Shihab

Date: 25/6/2024

Signature:



Scientific Associate Name:

Jabbar Galtmeh

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



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>discussion</i>	<i>theoretical</i>	Engineering Analytics	Maeg 132	Third
1	2			

8. Expected Learning Outcomes of the Program	
	<i>Knowledge</i>
	<p>1- Understanding and teaching the student general engineering concepts.</p> <p>2- The ability to distinguish, identify, define, formulate and solve engineering problems through the application of the principles of engineering, science and mathematics.</p> <p>3- Enabling students to obtain knowledge and understanding of other sciences.</p> <p>4- Pushing towards scientific research outside the framework of the curriculum.</p> <p>5- The ability to produce engineering designs that meet the required needs within certain constraints by applying both analysis and synthesis in the design process.</p> <p>6- The ability to recognize the constant necessity for the growth of professional knowledge and how to find, evaluate, assemble and apply it correctly.</p>
	<i>Skills</i>
	<p>1 – The ability to think about addressing the problems that arise during the implementation of work.</p> <p>2- The ability to keep pace with the development in engineering materials and implementation methods.</p> <p>3- The ability to solve problems in the workplace in this field.</p>

9. Teaching and learning strategies

- 1- *Lecture Method - Provide students with the basics and additional topics related to the pre-skills learning outcomes to solve practical problems.*
- 2- *Discussion method - Students are involved during the lecture by solving some practical problems.*
- 3- *Education through collaboration between students.*
- 4- *Education using electronic means.*
- 5- *Education by brainstorming among students.*
- 6- *Education using practical exercises.*

10. Evaluation methods

- 1- *Daily exams with practical and scientific questions.*
- 2- *Participation scores for challenging competition questions among students.*
- 3- *Develop grades for homework assignments and assigned reports.*
- 4- *Semester exams for the curriculum.*

11. Faculty

Faculty Members

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

Professional Development

Orientation of new faculty members

In addition to passing the courses of teaching methods and language safety, the department works on development courses and workshops to prepare and guide new teaching members.

Professional development for faculty members

Using learning platforms and electronic methods to display lectures, seminars and reports, display educational videos and conduct lectures accompanied by practical application.

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				
√	√	√	√	√	√	√	√	√	√	√	√	Essential	Engineering Analytics	Maeg 132	Third / Chapter One

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

Course Description Form

1. Course Title:					
Engineering Analytics					
2. Course Code:					
Maeg 132					
3. Semester / Year					
First - Third					
4. Date of preparation of the description					
23/6/2024					
5. Available attendance formats					
Came					
6. Number of Hours (Total) / Number of Units (Total)					
45/2					
7. Name of the course administrator (if more than one name is mentioned) –					
Name : Dr. Ali Nazem Jabara Email:alinadhimj@uodiyala.edu.iq					
8. Course Objectives					
<ul style="list-style-type: none"> General and qualifying skills transferred (other skills related to employability and personal development). Application of mathematical skills in practical problems Skills in oral and written communication, use of information and communicate effectively. Control time, resources and teamwork. Design ability and practical in analyzing problems and extracting information from published sources 			Course Objectives		
9. Teaching and Learning Strategies					
<ul style="list-style-type: none"> ✓ Lecture method - the teacher gives detailed lectures ✓ Discussion method. 					Strategy
10. Course Structure					
Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	Week
Theoretical exam and homework	Theoretical lecture and discussion	Complex number and variable operations	The concept of complex numbers	3	First
Theoretical exam and homework	Theoretical lecture and discussion	derivative and analytic functions	The concept of derivative and functions in complex numbers	3	Second
Theoretical exam and homework	Theoretical lecture and discussion	Cauchy Reimann equation	Understand Cauchy-Riemann's Equations	3	Third
Theoretical exam and homework	Theoretical lecture and discussion	Complex integration	Understand Integration in Complex Numbers	3	Fourth
Theoretical exam and	Theoretical lecture and discussion	Fourier series	Understanding Fourier Series	3	V

homework					
Theoretical exam and homework	Theoretical lecture and discussion	Periodic functions, Fourier series	Understand the basic terminology in Fourier	3	Sixth
Theoretical exam and homework	Theoretical lecture and discussion	Even and odd functions, half range expansion	Even and odd functions	3	Seventh
Theoretical exam and homework	Theoretical lecture and discussion	Partial Differential Equations Basic concept, modeling vibrating string	Basic concepts of partial differential equations	3	Eighth
Theoretical exam and homework	Theoretical lecture and discussion	wave equation	The concept of wave equation	3	Ninth
Theoretical exam and homework	Theoretical lecture and discussion	heat equation	The concept of heat equation	3	X
Theoretical exam and homework	Theoretical lecture and discussion	separation of variables	Know how to separate variables	3	Eleventh
Theoretical exam and homework	Theoretical lecture and discussion	D'Alembert solution of the wave equation	know Dr. Lambert's method of solving wave equations,	3	Twelfth
Theoretical exam and homework	Theoretical lecture and discussion	modeling of membrane 2D wave equation	Modeling the Equation of a Two-dimensional Membrane Wave	3	Thirteenth
Theoretical exam and homework	Theoretical lecture and discussion	Laplacian in polar coordinate,	The concept of the Laplace method	3	Fourteenth
Theoretical exam and homework	Theoretical lecture and discussion	solution by Laplace transform	The concept of solving equations by the Laplace method	3	Fifteenth

11. Course Evaluation	
Daily preparation score and attendance 5%	
Daily exam score 10%	
Monthly exam score 20%	
Seminar and reporting score 5%	
12. Learning and Teaching Resources	
Required textbooks (methodology, if any)	

	Main references (sources)
	Recommended supporting books and references (journals, reports..)
	Electronic References, Websites