

Ministry of Higher Education and Scientific Research
Supervision and Scientific Evaluation Authority
Department of Quality Assurance and Academic Accreditation

Academic Program Description Form for Colleges and Institutes Academic Year

University: Shatt Al-Arab
College/Institute: Engineering
Scientific Department: Civil Engineering
Date of Form Completion: 01/09/2025



Signature

Name of Head of Department:

Asst. Lecturer Nabeel Najm Abdullah



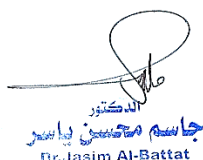
Signature

Name of Scientific Assistant

Dr. Jawad Kadhim

Reviewed by:
Quality Assurance and University Performance Division
Name of Division Director: Dr. Jasem Mohsen Yasser

Signature:



الدكتور
جاسم محمد ياسر
Dr. Jasim Al-Battat



أ.م.د. احسان قاسم محمد
عميد كلية الهندسة

Dean's Approval

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Analysis		Module Delivery
Module Type	Core		☐ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CE311		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	4	Semester of Delivery	2
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	e-mail		
Module Leader's Acad. Title	Module Leader's Qualification		
Module Tutor	e-mail		
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	1/09/2025	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Engineering Analysis		Semester
Co-requisites module	None		Semester

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The course aims to identify the following: 1- First order ordinary differential equations. 2- Engineering applications of first order differential equations 3- Second and higher order ordinary differential equations with fixed and variable coefficients 4- Engineering applications of second order differential equations 5- Fourier series 6- Partial differential equations
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	A- Knowledge and Understanding A1-Preparing applied engineers in the field of civil engineering who are distinguished by a high level of knowledge and analytical creativity in line with the solid standards adopted globally in ensuring quality and academic accreditation of corresponding engineering programs while adhering to the ethics of the engineering profession. A2- Enabling knowledge and understanding of practical applications according to the course objectives. A3- The ability to build a mathematical model to represent various engineering processes.A3- B. Subject-specific skills B1 - The ability to know and understand the mathematical model of the problem through the differential equation and its solution B2 - The ability to think about solving any problem. B3 - The ability to solve problems using analytical methods for differential equations. B4 - The ability to gain experience in dealing with initial problems and boundary conditions.
Indicative Contents المحتويات الإرشادية	• Readings, self-learning, panel discussions. • Exercises and activities in the lecture. • Homework. • Directing students to some websites to benefit and develop their capabilities. • Conducting seminars to explain and analyze a specific issue and find solutions to it
	• Direct questions in a manner (how and why) for the subject during the lecture. • short exams during the theoretical lecture. • Midterm exam.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	- The usual theoretical presentation method using the writing board and depending on the style (how and why) of the subject and according to the curriculum of the subject. - The theoretical presentation method using the (data show) device and depending on the method (how and why) of the subject and according to the subject curriculum. - The method of laboratory display using special devices for measuring the different properties of the substance under experiment.
	- Direct questions in a manner (how and why) for the subject during the theoretical and practical lecture. - Sudden exams during the theoretical and practical lecture. - Quarterly exams for the theoretical and practical side. - Final exams for the theoretical and practical side.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ 15 اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	140	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	10
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	60	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	7.2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	3 , 7	All
	Assignments	2	10% (10)	2,4,6,8,10,12	All
	Class activity	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	Midterm Exam	1 hr	10% (10)	10	1-5
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Differential Equations
Week 2	First order ordinary differential equations
Week 3	First order ordinary differential equations
Week 4	First order ordinary differential equations
Week 5	Applications of DEs
Week 6	Applications of differential equations
Week 7	Higher order ordinary differential equations
Week 8	Higher order ordinary differential equations
Week 9	Higher order ordinary differential equations
Week 10	Applications of higher order ordinary differential equations
Week 11	Applications of higher order ordinary differential equations
Week 12	Applications of higher order ordinary differential equations
Week 13	Fourier Series
Week 14	Partial Differential Equations
Week 15	Partial Differential Equations
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	MATHEMATICS, NINTH EDITION, JOHN WILEY & SONS, INC., 2006	Yes
Recommended Texts	Reputable websites.	No
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	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
Fail Group (0 – 49)	FX – Fail	راسب (تقيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks 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.				

