Course Description Form

1. Course Name:
Mathematics

2. Course Code:
MATH104

3. Semester / Year:
Autumn semester / 2023-2024- First stage

4. Description Preparation Date:
1/2/2024

5. Available Attendance Forms:
Attendance

6. Number of Credit Hours (Total) / Number of Units (Total):
30 practical hours/2 units

7. Course administrator's name (mention all, if more than one name)
Name: Mustafa Nadhim Salim
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8. Course Objectives
-Recognize the ideas behind different mathematical equations, the associated conditions, and the methods for solving them. -Gaining expertise in addressing partial derivatives in mathematical situations. -Giving the learner the opportunity to learn about mathematics in general and how it's used in various experiments -Giving the learner the ability to comprehend mathematics, apply it to situations, and follow the right procedures -Equipping the learner with the knowledge and abilities to handle diverse mathematical topics and applications. -Giving the student the ability to tackle challenging issues and a range of applications in diverse domains -Improving the student's proficiency using contemporary mathematical techniques. -Improving the student's proficiency with mathematics on websites for academic communication and the Internet. -Improving the student's capacity for discussion and conversation.

9. Teaching and Learning Strategies
- Scientific lectures, brainstorming, self-learning - Giving exercises and solutions to the exercises to students in various areas of general mathematics - Assigning students to prepare reports on various mathematics topics - Giving an assignment on the topic at the end of each lecture to solve mathematical problems

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 practical	A1 :The student should be able to know and understand groups of numbers and divide groups on a number line	numbers in mathematics	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
2	2 practical	B1 :The student should be able to know and understand	Groups in mathematics	Lectures, giving exercises and solutions to	Quizzes, Homework, Discussion and

				Lectures, giving exercises and solutions to exercises to students, daily exams, homework	solving exercises within the lecture, student interaction
		groups and operations on groups			
3	2 practical	C1 :The student should be able to know and understand the basic the fundamental matrix definitions and theorems.	Matrices, operations on matrices, orthogonal matrix	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
4	2 practical	C1 :The student should be able to know and understand the basic the fundamental matrix definitions and theorems.	Square, diagonal, rectangular matrix.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
5	2 practical	C1 :The student should be able to know and understand the basic the fundamental matrix definitions and theorems.	Conjugate matrix, inverse matrix.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
6	2 practical	C1 :The student should be able to know and understand the basic theorems and definitions related to determinants	Determinants, defined from the first, second, third, and fourth order.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
7	2 practical	A2 :The student should be able to know and understand the basic theorems and definitions related to determinants	Cramer's rule.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction,
8	2 practical	C2 :The student should be able to know and understand the basic theorems and definitions related to derivatives	Derivatives, laws of derivatives.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction,
9	2 practical	A3 :The student should be able to know and understand the basic theorems and definitions related to trigonometric functions	Trigonometric functions	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
10	2 practical	A3 :The student should be able to know and understand the basic theorems and definitions related to exponential functions	Exponential functions.	Lectures	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction

				Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
11	2 practical	A3 :The student should be able to know and understand the basic theorems and definitions related to logarithmic functions	Logarithmic functions.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
12	2 practical	B2 :The student should be able to know and understand the basic theorems and definitions related to integration and the laws of integration.	Integration, laws of integration.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
13	2 practical	B2 :The student should be able to know and understand the basic theorems and definitions related to the integration of trigonometric functions	Integration of trigonometric functions.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
14	2 practical	B2 :The student should be able to know and understand the basic theorems and definitions related to the integration of exponential functions	Integration of exponential functions.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction
15	2 practical	B2 :The student should be able to know and understand the basic theorems and definitions related to the integration of logarithmic functions	Integration of logarithmic functions.	Lectures, giving exercises and solutions to exercises to students, daily exams, homework	Quizzes, Homework, Discussion and solving exercises within the lecture, student interaction

11.Course Evaluation

Week		Grade
3	Quiz	%1
5	Quiz	%1
6	First Semester Exam	%15
7	Quiz	%1
9	Quiz	%1
11	Quiz	%1
14	Second Semester Exam	%15
1-15	Assignments	%4
1-15	Attendance	%1
Pursuit Score		%40
Final Exam		%60
Final Grade		%100

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Mathematics for Machine Learning author M. P.

	Deisenroth, A. A. Faisal and C. S. Ong
Main references (sources)	Mathematical Handbook of Formulas and Table
Recommended books and references (scientific journals, reports...)	1300 Math Formulas
Electronic References, Websites	**https://mathblog.com/mathematics-books/**

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