

## Course Description Form

1. Course Name:

Mathematics 1

2. Course Code:

MATH104

3. Semester / Year:

Spring semester / 2023-2024- Second 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)

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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 problems.
- Giving the learner the opportunity to learn about mathematics in general and how it's used in various applications.
- Giving the learner the ability to comprehend mathematics, apply it to situations, and follow the steps in solving problems.
- 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 mathematics.
- Improving the student's proficiency using contemporary mathematical software.
- Improving the student's proficiency with mathematics on websites for academic communication and research.
- Improving the student's capacity for discussion and conversation.

9. Teaching and Learning Strategies

- Scientific lectures
- 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
1	2 practical	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 students, daily exams, homework	Di e
2	2 practical	The student should be able to know and understand groups and operations on groups	Groups in mathematics	Lectures, giving exercises and solutions to students, daily exams, homework	Di e
3	2 practical	The student should be able to know and understand the basic the fundamental matrix definitions and	Matrices, operations on matrices, orthogonal matrix	Lectures, giving exercises and solutions to	Di

		theorems.		exercises to students, daily exams, homework	e
4	2 practical	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	Di e
5	2 practical	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	Di e
6	2 practical	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	Di e
7	2 practical	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	Di e
8	2 practical	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	Di e
9	2 practical	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	Di e
10	2 practical	The student should be able to know and understand the basic theorems and definitions related to exponential functions	Exponential functions.	Lectures	Di e
11	2 practical	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	Di e
12	2 practical	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	Di e
13	2 practical	The student should be able to know and understand the basic theorems and definitions related to the	Integration of trigonometric functions.	Lectures, giving exercises and solutions to	Di

		integration of trigonometric functions		exercises to students, daily exams, homework	
14	2 practical	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	Di e
15	2 practical	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	Di e

### 11. Course Evaluation

Sequence	Calendar methods	Calendar date (week)	Class
1	Report 1	fourth week	2.5
2	Report 2	fifth week	2.5
3	Short test (1) Quiz	sixth week	2
4	Short test (2) Quiz	fourteenth week	2
5	Short test (3) Quiz	fifteenth week	1
6	Semester test (1)	sixth week	7.5
7	Semester test (2)	eleventh week	7.5
8	Final theoretical test	Final semester exams	40
9	Practical field project	fifteenth week	5
10	Field evaluation	third and fifth week	2
11	Practical short test (1) Quiz	first week	1
12	Short practical test (2) Quiz	fourth week	0.5
13	Short practical test (3) Quiz	fourteenth week	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5
15	Final practical test	Final semester exams	20
	The total	100	100%

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Mathematics for Machine Learning Deisenroth, A. A. Faisal and C. S. Ong
Main references (sources)	Mathematical Handbook of Formulas and
Recommended books and references (scientific journals, reports...)	1300 Math Formulas
Electronic References, Websites	<a href="https://mathblog.com/mathematics-book">https://mathblog.com/mathematics-book</a>

رئيس اللجنة العلمية

أ.د. وعالم السيد

رئيس القسم

أ.م.د. حيدر محمد عزيز

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