Course Specifications

Course Title:	**Mathematics and Statistics**
Course Code:	**MATH 114**
Program:	**BSc in Business Administration**
Department:	**Mathematics**
College:	**Business Administration**
Institution:	**Jazan University**

Table of Contents

A. Course Identification

1. Credit hours: 3 hours

2. Course type

a. University ☐ College ☑ Department ☐ Others ☐

b. Required ☑ Elective ☐

3. Level/year at which this course is offered: Level 3/Year 2

4. Pre-requisites for this course (if any): **non**

5. Co-requisites for this course (if any): **Non**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	42	%100
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	42
2	Laboratory/Studio	
3	Tutorial	
4	Others (specify)	
	Total	42

B. Course Objectives and Learning Outcomes

1. Course Description

This course is designed to provide students with

- **Basic Algebraic Operations:** (Natural, integer, rational, real numbers, relation between them, algebraic operations and representation on the number line.
- **Equations and Inequalities:** (linear equations and their solutions, Quadratic equations and their solutions, and inequalities and their solutions)
- **Functions:** (definition. one to one and inverse functions, graphs).
- **Matrices:** (Concept of matrix, rank matrix, square matrix, unit matrix, inverse matrix, determinant matrix, algebraic operations on matrices).
- **Basic concepts in statistics:** (tabulation of data, arithmetic mean, median, mode, graphic representation).

2. Course Main Objective

After finishing the course, the student is expected to be familiar with the following:

- Basic algebraic operations.
- Equations and Inequalities.
- Functions, its properties, and methods of plotting them.
- Matrices, algebraic operations.

- Central tendency and graphical representation of data

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Distinguishing mathematical concepts relevant to basic algebraic operations, equations and inequalities, functions, its properties, and methods of plotting them, matrices, algebraic operations, and Central tendency and graphical representation of data	K1
1.2	Outline required notations and concepts in General Mathematics, matrices and statistics.	K2
2	**Skills :**	
2.1	Apply aspects relevant basic algebraic operations, equations and inequalities, functions, its properties, and methods of plotting them, matrices, algebraic operations, and Central tendency and graphical representation of data.	S1
2.2	Apply various mathematical rules, techniques and theorems in Application in General Mathematics, matrices and statistics.	S3
2.3	Apply mathematical problems using critical thinking and problem solving in General Mathematics, matrices and statistics.	S4
3	**Values:**	
3.1	Ability to work individually or within a team by independently and responsibility during group work and/or assignments.	V2
3.2	The student must adhere to Islamic values and distinguished professional practices.	V3

C. Course Content

No	List of Topics	Contact Hours
1	Basic Algebraic Operations: (Natural, integer, rational, real numbers, relation between them, algebraic operations and representation on the number line.	9
2	Equations and Inequalities: (linear equations and their solutions, Quadratic equations and their solutions, and inequalities and their solutions)	8
3	Functions: (definition. Domain, operation on functions, composition of functions, even and odd functions).	8
4	Matrices: (Concept of matrix, rank matrix, square matrix, unit matrix, inverse matrix, determinant matrix, algebraic operations on matrices).	9
5	Basic concepts in statistics: (tabulation of data, arithmetic mean, median, mode, graphic representation).	8
Total		

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Distinguishing mathematical concepts relevant to basic algebraic operations, equations and inequalities, functions, its properties, and methods of plotting them, matrices, algebraic operations, and Central tendency and graphical representation of data	Lectures, Web-based-work, Classroom discussion.	Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
1.2	Outline required notations and concepts in General Mathematics, matrices and statistics.		
2.0	**Skills**		
2.1	Apply aspects relevant basic algebraic operations, equations and inequalities, functions, its properties, and methods of plotting them, matrices, algebraic operations, and Central tendency and graphical representation of data.	Lectures, Web-based-work, Classroom discussion.	Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
2.2	Apply various mathematical rules, techniques and theorems in Application in General Mathematics, matrices and statistics.		
2.3	Apply mathematical problems using critical thinking and problem solving in General Mathematics, matrices and statistics.		
3.0	**Values**		
3.1	Ability to work individually or within a team by independently and responsibility during group work and/or assignments.	Group and interactive discussion, Group work	Assignments
3.2	The student must adhere to Islamic values and distinguished professional practices.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz	3	5
2	First exam.	7	20
3	Quiz	9	5
4	Second exam.	12	20
5	Final exam.	16	50

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Each group of students assigned to a member of staff who will be available for help and academic guidance office hours at specific hours on daily basis. At least be available 8 hours per week.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• Pre-calculus, Custon Edition Barnett, Ziegler and Bylenn, Complied by Samir H. Saker, McGraw Hill, (2009) • Elementary Statistics a Step by Step Approach Bluman, A. G 6Edition, McGraw-Hill. (2006).
Essential References Materials	• Algebra and Trigonometry; R. E. Larson, R. P. Ilosićtier, GM Edition, Houghton Miftlin Company, (2004) • College Algebra and Trigonometry, R. Aufmann, V. Barker, and R. Nation, 4' Edition, Houghton Mifflin Company, (2003).
Electronic Materials	Web sites dedicated to Fundamental of Mathematics, matrix algebra and statistics.
Other Learning Materials	None.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom, Computer Lab.
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show; Smart Board, Mathematics software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Non

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students, Peer and program leader	Indirect (Course Evaluation Survey)- Indirect peer evaluation
Assessment	Students, Program assessment committee	Direct/ Indirect

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achievement of course learning outcomes	Instructor	Direct/Indirect
Quality of learning resources	Students, Faculty members	Indirect

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	**Board of Mathematics Department**
Reference No.	
Date	