



Course Specifications

Course Title:	Mathematics I
Course Code:	MATH142
Program:	Foundation Year Level I
Department:	Mathematics
College:	Science And Humanities
Institution:	Prince Sattam Bin Abdulaziz University



Table of Contents

A. Course Identification.....	3
B. Course Objectives and Learning Outcomes.....	3
1. Course Description.....	3
2. Course Main Objective.....	3
3. Course Learning Outcomes.....	4
C. Course Content.....	4
D. Teaching and Assessment.....	4
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods.....	4
2. Assessment Tasks for Students.....	5
E. Student Academic Counseling and Support.....	5
F. Learning Resources and Facilities.....	5
1. Learning Resources.....	5
2. Facilities Required.....	5
G. Course Quality Evaluation.....	6
H. Specification Approval Data.....	6



A. Course Identification

1. Credit hours:	4 (3,1,0)
2. Course type	
a.	University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	- Foundation Year - Level 1
4. Pre-requisites for this course (if any):	NA
5. Co-requisites for this course (if any):	NA

6. Mode of Instruction (mark all that apply)

No.	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	Weekly 4 hours	100
2	Blended		
3	E-learning		
4	Correspondence		
5	Other	Weekly 5 hours	

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture (12 x 3)	36
2	Laboratory/Studio	
3	Tutorial (12 x 1)	12
4	Others (specify) - Office hours 5 hours a week	60
	Total	108

B. Course Objectives and Learning Outcomes

<p>1. Course Description Real Numbers and their properties – Fractions and the operations – Linear Equations – Quadratic Equations – Solution of Linear Equations by Substitution and Elimination – Set theory – representation of sets – types – disjoint, equal, equivalent sets – subset – power set and universal set – operations of sets – venn diagram – sequence and series – arithmetic and geometric sequence – matrices – types – equality of matrices – operations of matrices – determinant of a 2X2 matrix, inverse of a 2X2 matrix, determinant of a 3 X 3 matrix, solving the linear system of equations using inverse method – crammer's rule</p>
<p>2. Course Main Objective The main objective of this course is to provide students with a strong foundation in mathematical concepts which are essential for the study of Business administration.</p>



3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Acquire knowledge about Real number system, set theory and linear algebraic concepts	
1.2	Able to describe the appropriate method to solve linear equations	
2	Skills	
2.1	Able to perform various operations of sets	
2.2	Able to perform matrix operations and solve system of linear equations using matrix method and crammer's rule	

C. Course Content

No	List of Topics	Contact Hours
1	Number system and their Operations	4
2	Set Theory – Types of Sets – Operations of Sets – Venn Diagram	8
3	Equation using single variable	4
4	Solution of Quadratic Equations	4
5	Simultaneous linear equations and their solutions using substitution, elimination etc.	8
6	Matrices – Types of Matrices	4
7	Matrix Operations and solution of system of linear equations using Matrix method	8
8	Determinants – Cramer's rule	8
Total		48

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	Acquire knowledge about Real number system, set theory and linear algebraic concepts	1. Class Room Lectures 2. Interactive sessions 3. Exclusive Office Hours for clearing doubts in small groups	1. Mid Exam 2. At least two three Quiz 3. End Semester Exam
1.2	Able to describe the appropriate method to solve linear equations		
2.0	Skills		
2.1	Able to perform various operations of sets	1. Application oriented exercises during tutorial session. 2. Homework to improve the analytical skills	1. Homework 2. Assignments 3. Quiz 4. Mid Term and Final Exam
2.2	Able to perform matrix operations and solve system of linear equations using matrix method and crammer's rule		



2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid Term Exam I	6	20%
2	Quiz	3,8,10	15%
4	Continuous Assessment – Homework, Assignment, Attendance etc.	--	15%
5	End Semester Exam (50%)	15	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 :

1. Exclusive Office Hours – 5 Hours per week
2. Academic Advising for Students

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Earnest Haeuissier, Richard Paul, Richard Wood, S Khouybaba (2012), Introductory Mathematical Analysis, Arab world edition, Pearson
Essential References Materials	<ul style="list-style-type: none"> • M Lial, J Hornsby, D Schnider, C Daniels (2013), College Algebra and Trigonometry, Pearson, New International Edition,
Electronic Materials	<ul style="list-style-type: none"> •
Other Learning Materials	<ul style="list-style-type: none"> • Lecture Notes of the Department of Mathematics

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms with seating facilities for atleast 30 students
Technology Resources (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> • Providing classrooms with smart boards and data show • Teaching Resources Room
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N A



5

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of Teaching and assessment.	Students	Survey
Extent of achievement of course learning outcomes.	Developmental quality unit	Learning outcomes assessment.
Quality of learning resources Verifying standards of student achievement.	Developmental quality unit	Learning outcomes assessment.
Effectiveness of teaching.	Students	Survey
Extent of achievement of course learning outcomes.	Independent member teaching staff	Check marking by an independent member teaching staff of samples of student work.
Evaluation of the course file	Program quality and accreditation unit	Check and review the course file content.

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	Department Council Meeting No.13
Reference No.	Item No.5
Date	05.02.2023

