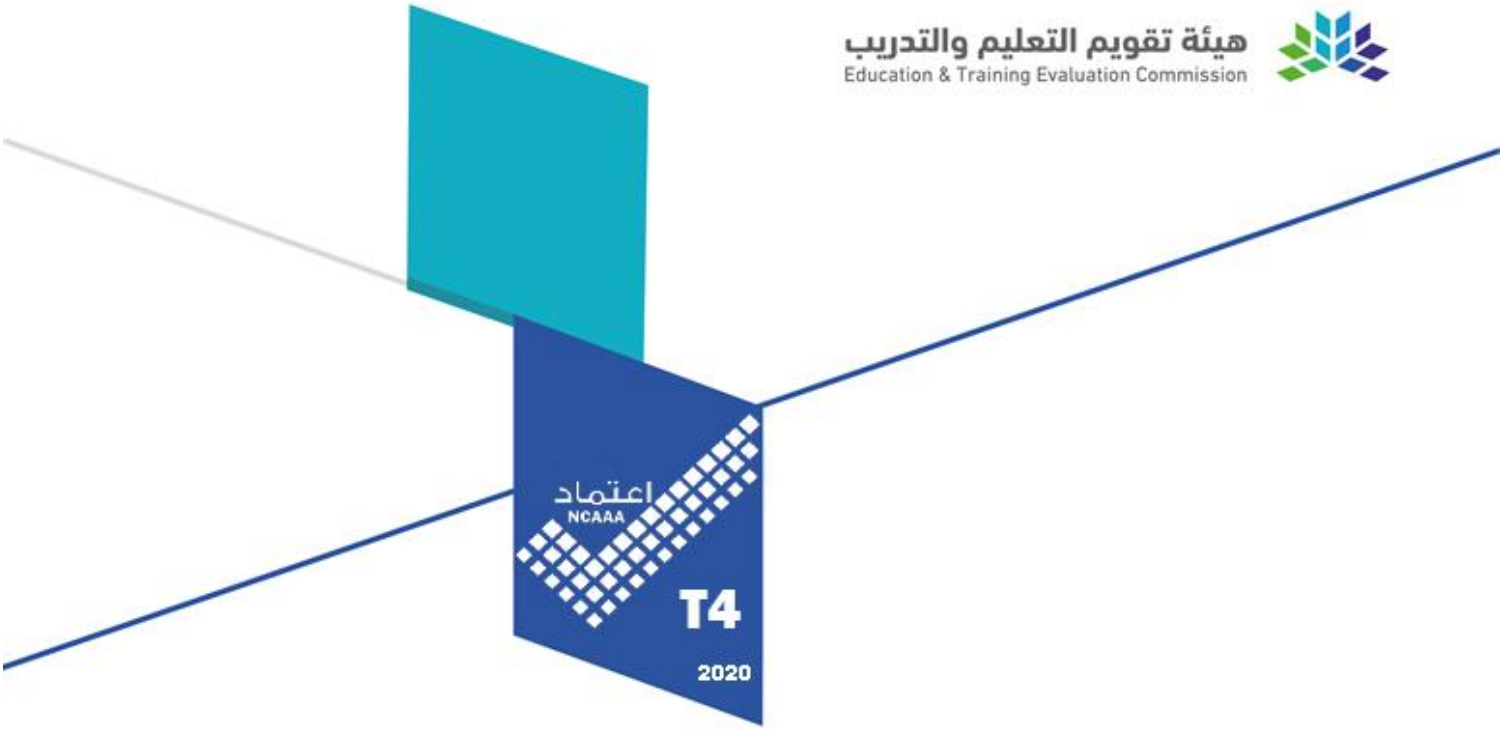
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	ELEMENTARY MATHEMATICS
Course Code:	**MATH1100**
Program:	**UPP**
Department:	**HUMANITIES**
College:	**COB/ CADD**
Institution:	**DAR AL ULOOM UNIVERSITY**

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A. Course Identification

1. Credit hours: 04
2. Course type **a.** University ■ College □ Department □ Others □ **b.** Required ■ Elective □
3. Level/year at which this course is offered: FIRST/FIRST YEAR
4. Pre-requisites for this course (if any)**:** English Language Level C Courses. ENGL0001, ENGL0002, ENGL0003, and ENGL0004
5. Co-requisites for this course (if any)**:** **Nothing**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	15X4 = 60	%100
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

* This year there were 20 weeks in total, after holidays only 15 weeks actual teaching left.

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	04 hours X 15 = 60
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description

During the semester the students will study: Real Number: Integers and Rational Numbers; Exponents; Radicals, Polynomials; Factoring; Linear and Absolute Value Equations; Quadratic & Other Types of Equations; Inequalities; Two-Dimensional Coordinate System and Graphs; Introduction to Functions; Linear Functions; Quadratic Functions; Properties of Graphs; Algebra of Functions; One-To-One Functions, Inverse Functions, Composition of Functions, Trigonometric Functions: Angles and Their Measures and Their Applications.

2. Course Main Objective

This course focuses on the development of students' critical mathematical skills through; Problem solving exercises. It aims at teaching basic numeracy skills and familiarizing the students with fundamental concepts of algebra including; Quadratics, Functions, Coordinate Geometry and Trigonometry. The students will also be introduced to abstract Concepts of Sets and Functions in detail.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	**By the end of the semester the Learner will be able to;** Memorize basic mathematical terms and formulae e.g. Polynomials, Functions, Domains, Quadratic Formula, Pythagorean Theorem etc….	
1.2	Write clearly all the steps of the solution for any basic algebraic equation.	
1...		
2	**Skills :**	
2.1	Use Appropriate mathematical formula to solve algebraic equations e.g. for Factoring or Solving Polynomials, Equations of the line etc…	
2...		
3	**Values:**	
3.1	Express a good code of conduct showing punctuality in relation to Assignment Submission, Class Participation, Presentation and dealing with other classmates in an ethical way.	
3...		

C. Course Content

No.	List of Topics	Contact Hours
0	**Registration Week**	0
1	**Students on this course will study:** **Algebraic expressions:** Real Number: Integers and Rational Numbers, Introduction to Real Number Properties and Their Usage, Commutative Properties, Associative Properties, Distributive Properties, Multiplicative and Additive Identities and Inverses, Operations with Algebraic Expressions. **Assignment 1 (week 3)**	12
2	**Exponents and Scientific Notation:** Exponential Rules and Examples on Exponents and Scientific Notation **Assignment 2 (week 5)**	8
3	**Radicals and Rational exponents:** Properties of Radicals, Rules and Examples. **Polynomials;** Polynomials, Types, Addition, Subtraction, Multiplication and Division of Polynomials. Fractions.: Simplifying Fractions, Multiplying, Dividing and Rationalizing Examples on Fractions **Quiz 1 (week 6)**	8
4	**Mid Term Exam 20 Grades (week 7)**	0
	Mid Term Vacation **Mar 10th – Mar 19th, 22**	0
5	**Factoring and Rational Expressions.** Factoring Rules, Different Types of Factoring, Examples on Factoring, Domain, Addition, Subtraction, Multiplication, Division of Rational Expressions.	8

6	**Graphs;** Graphs of Equations, Intercepts, Interpreting Information from Graphs, Two-Dimensional Coordinate System and Graphs; Different Types of Graphs Their Properties and Examples. **Linear and Absolute Value Equations;** Linear Equations, Rational and Absolute Value Equations. Lines. Examples on Lines, Types of The Lines, Methods to Calculate Five Different Forms of Lines, Slopes, Measurement of Slopes, Parallel and Perpendicular Lines. **Quadratic & Other Types of Equation**s; Quadratic Equations. Terminology, Types of Equations and Solutions. **Inequalities:** Linear Inequalities. Examples on Linear Inequalities, Absolute Value Inequalities, Properties of Absolute Value Inequalities. Examples of Absolute Value Inequalities. **Assignment 3 (week 10)**	7
7	**Introduction to Functions;** Functions, Special Functions. Examples on Functions, Examples on Graphs. Examples on Special Functions. **Linear Functions;** Properties, Examples **Quadratic Functions;** Properties, Graphs **Assignment 4 (week 13)**	5
8	**Algebra of Functions;** Addition, Subtraction, Multiplication and Division of Functions. Domain of Functions. **Inverse Functions;** Examples on Inverse Functions. Combinations of Functions, Examples on Combination of Functions. Composition of Functions. **Quiz 2 (week 17)**	5
9	**Trigonometric Functions:** Trigonometric Functions, Properties of Trigonometric Functions, Examples on Properties of The Trigonometric Functions. **Angles and Their Measures and Applications** Furthermore, We Will Develop an Understanding Of 5.1 Angles and Their Measure 5.2 Trigonometric Functions **Assignment 5 (week 18)**	5
10	**Review and Preparation for Final exam (Week 19)**	2
	Final Exam UPP (week 20)	
Total		60

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	**By the end of the semester the Learner will be able to;** Memorize basic mathematical terms and the formulae e.g. Quadratic Formula, Pythagorean Theorem, Polynomials, Functions, Domains etc.	Brainstorming and Discussion, Cooperative Learning, Inquiry Based Instructions, Solving Problems, Evaluation, Self-Study, Group Study, Assessment. Technology in Classroom.	Classroom Questions and Discussion, Solutions of Problems by Students Individually and In Form of Groups, Assignment And Quizzes.
1.2	Write clearly all the steps of the solution for any basic algebraic equation.	**Active teaching strategies including lectures, class room**	**Multiple and continuous**

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		exercise and take-home assignments. Cooperative Discussion, Visualization, Differentiation, Technology in Classroom, Problem Solving During Class at Home and Online Assessment, Evaluation, Individual Study	**assessments are used.** Class Room Questions, Question Solutions by Students Individually and In Form of Groups, Periodic: Online Assignment and Quiz, Discrete Testing, Indirect Testing, Summative test: Mid & Final term exam
…			
2.0	**Skills**		
2.1	Use Appropriate mathematical formula to solve algebraic equations e.g. For Factorizing Or Solving Polynomials, Equations Of The Line etc.	Brainstorming, Visualization, Cooperative Learning, Inquiry Based Instructions, Differentiation, Technology, Social Media, Solving Problems, Discussion, Group Study, Assessment, Individual Study, Evaluation.	Self-Study, Class Room Questions and Discussion, Question Solutions by Students Individually and In Form of Groups, Assignment and Quiz Summative test: Mid & Final term exam
2.2			
…			
3.0	**Values**		
3.1	Express a good code of conduct showing punctuality in relation Assignment Submission, Class Participation, Presentation and dealing with other classmates in an ethical way.	Individual Work, Behavior Management, and Teamwork.	Self-Study, Class Room Questions and Discussion, Question Solutions by Students Individually and In Form Of Groups, Assignment And Quiz Collaborative Learning
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment 1	Week 3	4
2	Assignment 2	Week 5	4
3	Quiz 1	Week 6	7.5
4	Midterm Exam	7 Week	20
5	Assignment 3	10 Week	4
6	Assignment 4	13 Week	4
7	Quiz 2*	17 Week	7.5
8	Assignment 5	Week 18	4
9	Class participation	Throughout Semester	5
10	Final term Exam	Week 20	40

***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:

Common Arrangements following University policy:

- Faculty members have 10 office hours per week alongside 18 credit hours. Students can contact in case of any problem during office hours. If these hours are not suitable for the students, they are given any other time that is suitable for both teacher and the student. Students could even discuss problem through Microsoft Teams meeting.
- Email Messages are sent to the Students announcing office hours and any important announcement relating assessments etc.
- Face to face meeting in the office to help solve students' problems
- Online one-to-one discussions through the Teams.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Algebra and Trigonometry by Robert Blitzer Ed 4th
Essential References Materials	Any text book related to basic topics of mathematics. Digital Library, University Learning Resource
Electronic Materials	Team Recordings of lectures Available content on LMS MathXL.com Pearsonhighered.com Khanacademy.com University online Library
Other Learning Materials	CD is available with text book.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	The class is of 30 Students though 50 seats can be placed in classroom easily. Whiteboard, Screen
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Board, Projector, laptop is available in class room, all the softwares are installed in laptops provided by university to all the faculty members. LMS: Learning Management system SIS: Student information system DL: Digital Library Microsoft Teams Smart digital pen
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	White board, markers, duster, digital pen

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Faculty, Students, HOD	Course evaluation(survey) is available on LMS and student have to fill it to know their final grades. HOD by attending classes and periodic meetings
Extent of achievement of course learning outcomes	Faculty, Program Leaders, Quality committee	Faculty, directly by measuring ILOs Program leader Indirectly by reviewing grades and ILOs measurement Quality Committee indirectly by auditing course files
Quality of learning resources	Faculty, Program Leader	Direct by completing surveys

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	
Reference No.	
Date	