Course Specifications

Course Title:	**Introduction to Mathematics**
Course Code:	**140 Math-2**
Program:	**Preparatory Year**
Department:	**Basic Sciences**
College:	**Art & Sciences**
Institution:	**Najran University**

Table of Contents

A. Course Identification

1. Credit hours: 4
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: First Level
4. Pre-requisites for this course (if any)**: none**
5. Co-requisites for this course (if any)**: none**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		**80**
2	**Blended**		
3	**E-learning**		**20**
4	**Correspondence**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	**30**
2	**Laboratory/Studio**	
3	**Tutorial**	**15**
4	**Others** (specify)	
	Total	**45**
Other Learning Hours*		
1	**Study**	**30**
2	**Assignments**	**30**
3	**Library**	**10**
4	**Projects/Research Essays/Theses**	
5	**Others** (specify)	**30**
	Total	**100**

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course is designed to cover topics in Algebra enhanced with pre-algebra topics such as arithmetic, fractions, and word problems as need, Trigonometry concepts such as Law of Sines and Cosines will be introduced. Topics include real numbers, linear equations and inequalities in one variable, polynomials, factoring, algebraic fractions, and quadratic equations, review of manipulative algebra; introduction to functions and graphs, including linear, quadratic, rational functions, logarithmic and exponential, and trigonometric functions.

2. Course Main Objective

Students able to build strong and sound understanding of Pre-calculus as a solid foundation for subsequent courses in mathematics and other disciplines as well as for applying in the real life.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Describe the basic concepts of equations, inequalities, and functions, and their rules, which will be cover in this course.	
1...		
2	**Skills :**	
2.1	Solve the equations and the inequalities, with Absolut value in one variable.	
2.2	Find the domain, the range, and the inverse of a function and their properties to sketch curve of it	
2.3	Apply the properties of exponential and logarithmic functions for specific equations and applications	
2.4		
2.5		
3	**Competence:**	
3.1		
3.2		
3.3		
3.4		
3.5		

C. Course Content

No	List of Topics	Contact Hours
1.	**Real Number System**	
2.1	Sets and Real Numbers.	3
2.2	Exponents and Radicals	3
2.3	Rational Expressions.	3
2.	**Equations and Inequalities**	
2.1	Linear Equations and Applications.	4
2.2	Linear Inequalities	4
2.3	Equations and Inequalities Involving Absolute Value	3
2.4	Quadratic Equations and Applications.	3

3.	**Functions**	
3.1	Functions	3
3.2	Polynomials and Rational Functions	3
3.3	Combining Functions	3
3.4	Inverse Functions	3
4.	**Functions**	
4.1	Exponential Functions	3
4.2	4.2 Logarithmic Functions	3
4.3	4.3 Logarithmic and Exponential Equations	3
Total		45

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	**Knowledge:**		
1.3	Describe the basic concepts of equations, inequalities, and functions, and their rules, which will be cover in this course.	Lecture Cooperative learning Problem solving Brain storming Self-Learning	Midterm Exam Final Exam
1...			
2	**Skills :**		
2.1	Solve the equations and the inequalities, with Absolut value in one variable.		Midterm Exam Final Exam
2.2	Find the domain, the range, and the inverse of a function and their properties to sketch curve of it		
2.3	Apply the properties of exponential and logarithmic functions for specific equations and applications		
2.4			
2.5			
2.6			
3	**Competence:**		
3.1			
3.2			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	1st midterm Exam	7th week	20
2	2nd midterm Exam	11TH week	20
3	Assignments & Quizzes	During classes	10
4	Final Exam	At the end	50
8			

***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 :

- Office Hours
- Blackboard

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Pre-Calculus Made Simple, A. H. Khashan, S. T. Obeidat and, K. H. Khashan, The King Saud University, 2nd Edition Year: 2014.
Essential References Materials	• College Algebra with Trigonometry, 8e by Raymond Barnett Michael Ziegler Karl Byleen. • College Algebra and Trigonometry: Graphs and Models, by Raymond Barnett Michael Ziegler Karl Byleen. • Pre-calculus: Graphs and Models, 3e by Raymond Barnett Michael Ziegler Karl Byleen David Sobecki
Electronic Materials	• https://www.ck12.org/book/CK-12-Calculus-Concepts/section/1.7/ • https://zr9558.files.wordpress.com/2013/10/thomas_-calculus.pdf
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom
Technology Resources (AV, data show, Smart Board, software, etc.)	Data Show Free software as (Geogebra) https://www.geogebra.org/graphing
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

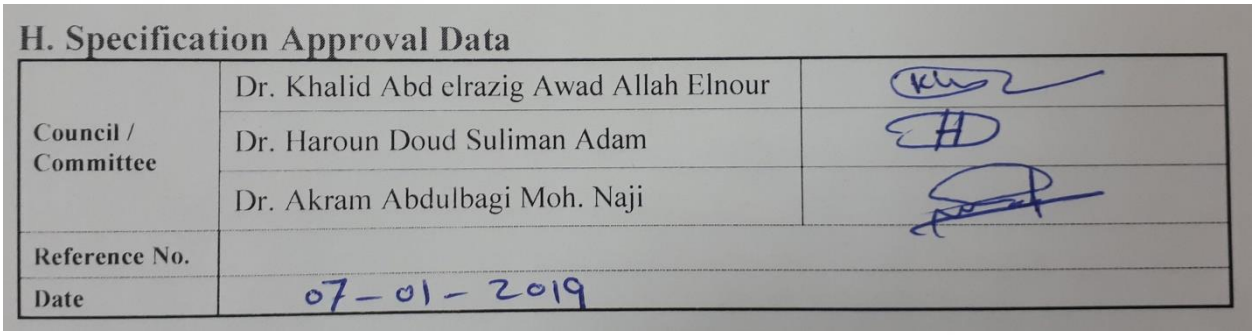
G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Questioner (Indirect)
achievement of course learning outcomes	Lecturer	Software (Direct)
Quality of learning resources	all	Questioner (Indirect)

Evaluation Areas/Issues	Evaluators	Evaluation Methods

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



H. Specification Approval Data

Council / Committee	Dr. Khalid Abd elrazig Awad Allah Elnour	
	Dr. Haroun Doud Suliman Adam	
	Dr. Akram Abdulbagi Moh. Naji	
Reference No.		
Date	07-01-2019