Course Specifications

Course Title:	General Mathematics
Course Code:	**1003-101**
Program:	**N/A**
Department:	**Basic Science**
College:	**Deanship of Preparatory Year & Supportive Studies**
Institution:	**Northern Border University**

Table of Contents

A. Course Identification

1. Credit hours: 3
2. Course type **a.** University [√] College [ ] Department [ ] Others [ ] **b.** Required [√] Elective [ ]
3. Level/year at which this course is offered: **Preparatory Year**
4. Pre-requisites for this course (if any)**:** **N/A**
5. Co-requisites for this course (if any)**:** **N/A**

6. Mode of Instruction (mark all that apply)

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

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	45
2	**Laboratory/Studio**	---
3	**Tutorial**	---
4	**Others** (specify)	---
	Total	45
Other Learning Hours*		
1	**Study**	25
2	**Assignments**	20
3	**Library**	20
4	**Projects/Research Essays/Theses**	---
5	**Others** (Homework)	20
	Total	85

* 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

Fundamentals: Real numbers - Sets of Numbers - Real Line - Interval Notation - Absolute Value - Exponents and Radicals - Algebraic Expressions – Fractional expressions

Equations, Inequalities and Line: Solving equations and Inequalities - Coordinate Plane – Distance and Midpoint Formulas – Equation of Line

Function and Their Graphs: Function Notation – Vertical Line Test – Domain and Range - Graphs of Functions – Even and Odd Functions – Rational Functions - Function Arithmetic – Function Composition - One – to – one functions and their inverses

Polynomial Functions: Polynomial and Rational functions Polynomial functions and their graphs - dividing polynomials

Exponential and Logarithmic functions: Exponential and Logarithmic equations – Graphs of Exponential and Logarithmic function – Solving Exponential and Logarithmic Equations

The Radian Measure and Unit Circle: Radian Measure – The Unit Circle - Trigonometric Functions – The six Circular Function – Trigonometric Identities – Graphs of The Trigonometric Functions.

2. Course Main Objective

1- Learn basic math rules and laws.
2- Use rules and laws to resolve various examples.
3- Understand the key concepts.
4- Students gain logical thinking skills needed to resolve issues.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1	Memorize the previous knowledge.	N/A
1.2	Recognize the rules and laws of basic mathematics.	N/A
1.3	Discover how to perform various calculations.	N/A
1.4	Determine some applications solutions and engineering issues.	N/A
2	**Skills :**	
2.1	Solve various examples using rules and laws.	N/A
2.2	Apply operations on algebraic amounts.	N/A
2.3	Discover how to solve mathematical equations.	N/A
3	**Competence:**	
3.1	Prepare the students to think and communicate with other classmates on the same issues.	N/A

C. Course Content

No	List of Topics	Contact Hours
1	Fundamentals	9
2	Equations, Inequalities and Line	9
3	Function and Their Graphs	9
4	Polynomial Functions	6
5	Exponential and Logarithmic functions	6
6	The Radian Measure and Unit Circle	6
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
1.0	**Knowledge**		
1.1	Memorize the previous Knowledge.	Lectures, Paper, Assignments, Homework, Web-based Assignments.	Quizzes, Mid-term Test, Final Test.
1.2	Recognize the rules and laws of basic mathematics.	Lectures	Group discussion, Quizzes, Assignment, Written Test.
1.3	Discover how to perform various calculations.	Assignments, Homework	Group discussion, Quizzes, Assignment, Written Test.
1.4	Determine some applications solutions and engineering issues.	Lectures, Paper, Assignments, Homework	Group discussion, Quizzes, Assignment, Written Test.
2.0	**Skills**		
2.1	Solve various examples using rules and laws.	Lectures, Homework.	Group discussion, Assignment,
2.2	Apply operations on algebraic amounts.	Lectures, Homework, Assignments.	Assignment, Written Test.
2.3	Discover how to solve mathematical equations	Lectures, Homework, Assignments.	Quizzes, Mid-term Test, Final Test.
3.0	**Competence**		
3.1	Prepare the student to think and communicate with other colleagues in the same issues.	Lectures, Paper, Assignments, Homework	Group discussion, Assignment,

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Attendance &	Every Week	5
2	Quiz 1	4	5
3	Mid – Term Test	8	30
4	Quiz 2	12	5
5	Quiz 3	15	5
6	Final Test	16	40
7	Cooperation	Every Week	10

***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 :

Student counseling and academic Committee works with the faculty in cultural, social and sports activities for students.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Precalculus for Preparatory Year Students By Basic Science Department
Essential References Materials	1- Calculus in Context The Five College Calculus Course. James Callahan, Smith College; David Cox, Amherst College; Kenneth Hoffman, Hampshire 2- Calculus Early Transcendental, 6th edition, by James Stewart, Thomson. Inc. 3- Precalculus: Mathematics for Calculus, 6th edition by James Stewart, Lothar Redlin, Saleem Watson.
Electronic Materials	Blackboard system
Other Learning Materials	Web sites of the other Saudi Universities, Learning videos on YouTube web site.

2. Facilities Required

Item	Resources
Accommodation	Classrooms
Technology Resources	data show, Smart Board
Other Resources	N/A

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Strategies for getting feedback from students about teaching quality	Students	Indirect, Direct
Other strategies for evaluating the teaching process	Teacher	Direct
Teaching development	Department & College	Indirect, Direct
Verification of teaching standards	Independent Teacher	Indirect, Direct
Action plan for development	Department	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	Supervisor of Basic Science Department-Dean of Preparatory Year and Supportive Studies
Reference No.	10th
Date	10-09-1440 H