



NORTH SOUTH UNIVERSITY

Center of Excellence in Higher Education

The first private university in Bangladesh

Department of Mathematics and Physics

Course Name:	Introduction to Business Mathematics
Course Code	BUS 112
Section No:	
Semester:	Spring 2024

INSTRUCTOR & DEPARTMENT INFORMATION

Instructor Name:	
Office Room:	
Office Hours:	
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Course Coordinator:	Mahboob Shaheen
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Links:	North South University Website: http://www.northsouth.edu Department Website: http://www.northsouth.edu/academic/seps/dmp.html

COURSE & SECTION INFORMATION

Class Time	
Location	
Course Credit Hours	3:0
Course Description	This course provides students an overview of the fundamentals of Mathematics. It develops the students' understanding of basic arithmetic, algebra and geometry.
Course Objectives	This course is designed to help students to develop competence in applying the mathematical concepts, skills and techniques learned, to problem-solving situations in the areas of business and economics.

Student Learning Outcomes

Upon the successful completion of this course, a student will be able to:

- CO-1. Identify and apply the fundamental concepts of Algebra to solve basic quantitative problems involving sets, number systems, counting, linear systems and Matrix.
- CO-2. Classify linear and quadratic equations and/or inequalities and apply them in real- life situations
- CO-3. Recognize the Cartesian co-ordinate, and represent graphs of functions in Cartesian co-ordinate system.
- CO-4. Develop the prerequisite knowledge and mathematical skills necessary to undertake higher level courses which have a quantitative focus.

Mapping of Course Outcomes

	Course Outcomes (CO)	Bloom's taxonomy domain/level (C: Cognitive P: Psychomotor A: Affective)	Delivery methods and activities	Assessment tools
CO-1	Identify and apply the fundamental concepts of Algebra to solve basic quantitative problems involving sets, number systems, counting, linear systems and Matrix.	C2,C3	Lecture Discussion	Quiz Assignment
CO-2	Derive linear and quadratic equations and/or inequalities based on real- life situations and solve them.	C2,C3	Lecture, in-class group discussion	Midterm exam Assignment
CO-3	Recognize the Cartesian co-ordinate and represent graphs and functions in Cartesian co-ordinate system.	C1,C2, P1	Lecture Discussion	Class work Quiz, Assignment Final Exam
CO-4	Develop the prerequisite knowledge and mathematical skills necessary to undertake higher level courses which have a quantitative focus.	C3,P1	Lecture Discussion	Assignment

LEARNING RESOURCES AND TEXTBOOK(S)

Text Book		Reference Book
Author	Margaret L. Lial, Charles D. Miller and David I. Schneider	
Title	" Algebra and Trigonometry "	Handout
Edition & Year	6 th edition, 2011	
Publisher	Harper Collins	
ISBN	10: 0673469360 / , 13:9780673469366	

TEACHING STRATEGY

The class will be conducted through various activities including discussion of concepts and problem-solving, student initiative and active involvement as well as practice of quantitative problems. Students are expected to actively involve and to take initiative for their own learning experience.

ASSESSMENT STRATEGY		GRADING POLICY		
Grading tool	Points	Numerical Scores	Letter Grade	Grade Points
Attendance	10%	93 +	A (Excellent)	4.0
Assignment	10%	90 - 92	A-	3.7
Quiz	20%	87 - 89	B+	3.3
Midterm	25%	83 - 86	B (Good)	3.0
Final Exam	35%	80 - 82	B-	2.7
		77 - 79	C+	2.3
		73 - 76	C (Average)	2.0
		70 - 72	C-	1.7
		67 - 69	D+	1.3
		60 - 66	D (Poor)	1.0
		Below 60	F (Failure)	0.0

Classroom Rules of Conduct

Please Refer to NSU Student Handbook, Sections: “Disciplinary Actions” and “Procedures and Guidelines”.

Attendance Policy: As per NSU policy.

COURSE PLAN & SCHEDULE

Lecture No.	Topic	Learning Activities	Assessment tools	Learning Outcome	Chapter
1	Various types of numbers, decimal systems of numbers	Lecture	Discussion	CO-1	Chapter 1.1 & Handout
2	Binary system of numbers	Lecture Assignment	Problem solving, Quiz	CO-1	Chapter 1.1 & Handout
3	Definition of set, notation, various types of operations on set	Lecture Discussion	Midterm, Quiz	CO-1	Handout
4	Power set, partition on sets	Lecture Discussion	Midterm Assignment	CO-1	Handout
5	Power set, partition on sets, properties on sets	Lecture Discussion	Midterm Assignment	CO-1	Handout
6	Introduction to Counting, Permutation	Lecture Discussion	Midterm, Quiz	CO-1	Chapter 11.6 & Handout
7	Combination	Lecture Discussion	Midterm, Quiz	CO-1	Chapter 11.6 & Handout
8	Exponents, product rule, power rule and quotient rule	Lecture Discussion	Midterm, Quiz	CO-1	Chapter 1.2
9	Linear equations	Lecture Assignment	Midterm Assignment	CO-2	Chapter 2.1
10	Linear inequalities	Lecture Assignment	Midterm Assignment	CO-2	Chapter 2.6
11	Cartesian coordinate systems	Lecture Discussion	Midterm Assignment	CO-3	Chapter 3.1
12	Mid Term				
13	Equations of straight line	Lecture Assignments	Final Exam, Quiz	CO-3	Chapter 3.5 & Handout
14	Different form of equations of straight line and their sketching	Lecture Assignments	Final Exam, Quiz	CO-3	Chapter 3.5 & Handout
15	Different form of equations of straight line and their sketching	Lecture Assignments	Final Exam, Quiz	CO-3	Chapter 3.5 & Handout
16	Trigonometric ratios and slope	Lecture Assignments	Final Exam, Assignment	CO-3	Chapter 6
17	Systems of Linear Equations	Lecture Discussion	Final Exam, Assignment	CO-3	Chapter 6
18	Systems of Linear Equations	Lecture Discussion	Final Exam, Assignment	CO-3	Chapter 6
19	Matrix, Properties of matrices, Rank of a matrix	Lecture Assignment	Final Exam Quiz	CO-1	Chapter 9.3
20	Inverse of a matrix	Lecture	Final Exam Quiz	CO-1	Chapter 9.4
21	Matrix Solution of Linear Systems of Equations	Lecture Assignment	Final Exam Assignment	CO-1	Chapter 9.7
22	Determinants, Cramer's Rule	Lecture Discussion	Final Exam Quiz	CO-1	Chapter 9.5, 9.6
23	Summation and Product notation, Arithmetic Progression	Lecture Assignment	Final Exam Assignment	CO-2	Chapter 11.1, 11.2
24	Summation and Product notation, Arithmetic Progression	Lecture Assignment	Final Exam Assignment	CO-2	Chapter 11.1, 11.2
25	Geometric Progression, Simple and Compound Interest	Lecture Assignment	Final Exam, Quiz	CO-2	Chapter 11.3 & Handout
26	Exponential functions, properties of exponential functions	Lecture Assignment	Final Exam, Quiz	CO-3	Chapter 5.1
27	Logarithmic functions, properties of logarithmic functions	Lecture Assignment	Final Exam, Quiz	CO-3	Chapter 5.2

28	Graph of Exponential and Logarithmic Equations	Lecture Assignment	Final Exam Quiz	CO-3	Chapter 5.1, 5.2
29	Exponential and Logarithmic Equations	Lecture Discussion	Final Exam Discussion	CO-3	Chapter 5.3
30	Review class				
Final Exam (Declared by the Controller of Examinations)					

Note: The instructor reserves the right to make changes to the syllabus if necessary.

Rules and regulations:

- (a) There is **no scope to retake a quiz**. In case of Mid-term- or Final exam, exceptional cases*(unfortunate physical inability, accidents, serious illness) may be considered conditionally (with a **penalty of 20% reduced marks**) with proper justification.
- (b) Three consecutive absents need an official clarification.
- (c) Student having attendance **less than 60% of total classes will be not allowed to sit for Final Exam**.

**** Three quizzes will be taken.**

***** Two assignments will be taken.**

Note: Full attendance will carry the bonus marks.

***** **No Make Up Exam** *****