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:	**Summer 2022**

INSTRUCTOR & DEPARTMENT INFORMATION

Instructor Name:	
Office Room:	
Office Hours:	**TBA**
Office Phone:	
Email Address:	
Department:	**Mathematics and Physics**
Links:	North South University Website: http://www.northsouth.edu Department Website: http://www.northsouth.edu/academic/seps/dmp.html

COURSE & SECTION INFORMATION

Class Time	**TBA**
Location	**TBA**
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.Classifylinear 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 basicquantitative problemsinvolving sets, number systems, counting, linear systemsand Matrix.	**C2,C3**	Lecture Discussion	Quiz Assignment
CO-2	Derivelinear 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	Recognizethe 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	Developthe prerequisite knowledge and mathematical skills necessary to undertake higher level courses which have a quantitative focus.	**C3,P1**	LectureDiscussion	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	6th 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 aspractice of quantitative problems. Students are expected to actively involve and to take initiative for their own learning experience.

ASSESSMENT STRATEGY	
Grading tool	**Points**
Attendance	10
Assignment and performance	10
Quiz	15
Midterm	30
Final Exam	35

GRADING POLICY		
Numerical Scores	**Letter Grade**	**Grade Points**
93 +	A (Excellent)	4.0
90 - 92	A-	3.7
87 - 89	B+	3.3
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

1. Electronic devices e.g**. cell phone**, **notepad, iPad, iPod, mp3, etc.** are strictly prohibited in the class.

2. It is imperative that the students maintain absolute discipline in class. Students are also expected to arrive on time for the class, as frequent late attendance will not be accepted.

3. **Academic Integrity Policy:** Department of Mathematics and Physics does not tolerate academic dishonesty by its students. At minimum, students must not be involved in cheating, copyright infringement, submitting the same work in multiple courses, significant collaboration with other individuals outside of sanctioned group activities, and fabrications.

Students are advised that violations of the Student Integrity Code will be treated seriously, with special attention given to repeated offences.

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

EXAMS & MAKE UP POLICY

At least three quizzes will be taken (best **Two** out of **Three** will be considered). **NO makeup for quizzes will be taken under any circumstances.** If a student misses any of the Midterm exams **only** due to extreme emergencies (official material evidence is required), the instructor will take the decision for his/her makeup exams. There will be **no extra question** in the Midterm and Final exams, so that students should have to answer all of the questions given in the question paper.

Cell phones are **prohibited** in exam sessions.

ATTENDANCE POLICY

Students are required and expected to attend all classes regularly and on time and participate in class discussions. North South University mandates to fail students who are absent 25% or more from their classes, even if such absences are excusable. If a student misses more than two lectures, marks will be deducted for each day of absence. Absence due to extreme situations will be considered an exception, as per the instructor's decision. It is the responsibility of the student to become aware of other course-related announcements missed during an absence. Students not missing any course lectures and exams will receive an attendance bonus of 2% of total marks.

Please Refer to NSU Student Handbook, Section: "Study Principles and Policies"

COMMUNICATION POLICY

All communications should take place using the instructor's **email**. Announcements in class will override any statement made here or in any other handouts. It is the student's responsibility to be aware of any announcements made in class.

APPROPRIATE USE POLICY

All members of the North South University community must use electronic communications in a responsible manner. The University may restrict the use of its computers and network systems for electronic communications subject to violations of university policies/codes or local laws or national laws. Also, the university reserves the right to limit access to its networks through university-owned or other computers, and to remove or limit access to material posted on university-owned computers.

COURSE PLAN & SCHEDULE

Lecture No.	*Topic*	Learning Activities	Assessment tools	Learning Outcome	Chapter
1	Various types of numbers, decimal and binary systems of numbers	Lecture	Discussion Midterm	CO-1	Chapter 1.1 & Handout
2	Binary system of numbers	Lecture Assignments	Problem solving, Quiz	CO-1	Chapter 1.1 & Handout
3	Definition of set, notation, various types of operations on set	Lecture Discussion	Midterm	CO-1	Handout
4	Power set, partition on sets, properties on sets	Lecture Assignments	Midterm Assignment	CO-1	Handout
5	Introduction to Counting, Permutation	Lecture Discussion	Midterm, Quiz	CO-1	Chapter 11.6 & Handout
6	Combination	Lecture Assignments	Midterm	CO-1	Chapter 11.6 & Handout
7	Exponents, product rule, power rule and quotient rule	Lecture Assignments	Midterm Assignment	CO-1	Chapter 1.2
8	Linear equations and inequalities	Lecture	Midterm	CO-2	Chapter 2.1, 2.6
9	Cartesian coordinate systems	Lecture Discussion	Midterm Quiz	CO-3	Chapter 3.1
10	Equations of straight line, different form of equations of straight line and their sketching	Lecture Assignments	Midterm Quiz	CO-3	Chapter 3.5
11	Trigonometric ratios and slope	Lecture Discussion	Midterm Quiz	CO-3	Chapter 6

12	**Midterm**				
13	Systems of Linear Equations	Lecture	Final Exam	CO-1	Chapter 9.1
15	Matrix Solution of Linear Systems of Equations	Lecture Assignment	Final Exam Assignment	CO-1	Chapter 9.3
16	Matrix, Properties of matrices, Rank of a matrix	Lecture	Final Exam Quiz	CO-1	Chapter 9.4
17	Inverse of a matrix	Lecture Assignment	Final Exam Assignment	CO-1	Chapter 9.7
18	Determinants, Cramer's Rule	Lecture Discussion	Final Exam Quiz	CO-1	Chapter 9.5, 9.6
19	Summation and Product notation, Arithmetic Progression	Lecture Assignment	Final Exam Assignment	CO-2	Chapter 11.1, 11.2
20	Geometric Progression, Simple and Compound Interest	Lecture Assignment	Final Exam	CO-2	Chapter 11.3 & Handout
21	Exponential functions, properties of exponential functions	Lecture	Final Exam	CO-3	Chapter 5.1
22	Logarithmic functions, properties of logarithmic functions	Lecture	Final Exam	CO-3	Chapter 5.2
23	Graph of Exponential and Logarithmic Equations	Lecture Assignment	Final Exam Quiz	CO-3	Chapter 5.1, 5.2
24	Exponential and Logarithmic Equations	Lecture Discussion	Final Exam Discussion	CO-3	Chapter 5.3
Final Exam (Declared by the Controller of Examinations)					

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