



# NORTH SOUTH UNIVERSITY

*Center of Excellence in Higher Education*

*The first private university in Bangladesh*

## Department of Mathematics and Physics

<b>Course Name:</b>	<b>Introduction to Business Mathematics</b>
<b>Course Code</b>	<b>BUS 112</b>
<b>Section No:</b>	<b>TBA</b>
<b>Semester:</b>	<b>Fall 2018</b>

### INSTRUCTOR & DEPARTMENT INFORMATION

<b>Instructor Name:</b>	TBA
<b>Office Room:</b>	TBA
<b>Office Hours:</b>	TBA
<b>Office Phone:</b>	TBA
<b>Email Address:</b>	TBA
<b>Department:</b>	<b>Mathematics and Physics</b>
<b>Links:</b>	North South University Website: <a href="http://www.northsouth.edu">http://www.northsouth.edu</a> Department Website: <a href="http://www.northsouth.edu/academic/seps/dmp.html">http://www.northsouth.edu/academic/seps/dmp.html</a>

### COURSE & SECTION INFORMATION

<b>Class Time</b>	TBA
<b>Location</b>	TBA
<b>Course Credit Hours</b>	3:0
<b>Course Description</b>	This course provides students an overview of the fundamentals of Mathematics. It develops the students' understanding of basic arithmetic, algebra and geometry.
<b>Course Objectives</b>	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

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

## LEARNING RESOURCES AND TEXTBOOK(S)

<b>Text Book</b>		<b>Reference Book</b>
<b>Author</b>	Margaret L. Lial, Charles D. Miller and David I. Schneider	
<b>Title</b>	"Algebra and Trigonometry"	Handout
<b>Edition &amp; Year</b>	6 <sup>th</sup> edition, 2011	
<b>Publisher</b>	Harper Collins	
<b>ISBN</b>	10: <a href="#">0673469360</a> / , 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	05%	93 +	A (Excellent)	4.0
Assignment	05%	90 - 92	A-	3.7
Quiz	15%	87 - 89	B+	3.3
Midterm I	20%	83 - 86	B (Good)	3.0
Midterm II	20%	80 - 82	B-	2.7
Final Exam	35%	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

Four quizzes will be taken (best **Three** out of **Four** 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.

## **STUDENTS WITH SPECIAL NEEDS**

North South University will provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities/special needs that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructors to ensure that their needs are met. The University through its Special Need section will exert all efforts to accommodate special needs.

### **Special Needs Section**

Telephones: +88-02-5566 8200 ext-1220  
Location: Room # 413/A, Admin Building (4<sup>th</sup> floor).

Please Refer to NSU Student Handbook, Section: "Special Needs Services"

## **STUDENTS COMPLAINTS POLICY**

Students at North South University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

## 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 I	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 I	CO-1	Handout
4	Power set, partition on sets, properties on sets	Lecture Assignments	Midterm I Assignment	CO-1	Handout
5	Introduction to Counting, Permutation	Lecture Discussion	Midterm I, Quiz	CO-1	Chapter 11.6 & Handout
6	Combination	Lecture Assignments	Midterm I	CO-1	Chapter 11.6 & Handout
7	<b>Midterm I</b>				
8	Exponents, product rule, power rule and quotient rule	Lecture Assignments	Midterm I Assignment	CO-1	Chapter 1.2
9	Linear equations and inequalities	Lecture	Midterm II	CO-2	Chapter 2.1, 2.6
10	Cartesian coordinate systems	Lecture Discussion	Midterm II Quiz	CO-3	Chapter 3.1
11	Equations of straight line, different form of equations of straight line and their sketching	Lecture Assignments	Midterm II Assignment	CO-3	Chapter 3.5
12	Trigonometric ratios and slope	Lecture Discussion	Midterm II	CO-3	Chapter 6
13	Systems of Linear Equations	Lecture	Midterm II	CO-1	Chapter 9.1
14	<b>Midterm II</b>				
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
<b>Final Exam (Declared by the Controller of Examinations)</b>					

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