



Greenwich University

COURSE OUTLINE

SPRING 2019 Term

- **Course** : **Mathematics (Algebra)**
- **Code** : **GMAT 101**

ADMINISTRATIVE INFORMATION

- **Instructor** : **Mr. Tewfik Futloo**
- **Instructor's Email** : **tewfik@greenwich.edu.pk**
(Assignments given should be sent to the instructor via email above for marking. After checking they will be returned before the next class.)
- **Class Session** : **March 25, 2019 – July 20, 2019**
- **Class Timings** : **Saturday, 11:30 Am - 01:30 Pm**

A 10-minute break will be given. Any student coming late or returning late after the break will be considered absent for that day.

In case of cancellation / makeup of a class you will be notified through the website of Greenwich and / or through your Greenwich email account.

ATTENDANCE:

100% class attendance is mandatory for the students to enable them to appear in the final examination. However, in case of an emergency / serious illness the students will be eligible to (02) absences during the whole semester.

RULES AND REGULATIONS:

- All mobile phones must remain switched off or kept on silent / vibration mode) for the entire duration of a class. Any breach of this rule will lead to immediate confiscation of the phone, which will only be returned after the semester is over.
- Smoking is strictly prohibited on the entire campus, except the cafeteria.
- No food, drinks, gum or beetle-nut (chalia) are allowed inside the classroom.
- In order to maintain the sanctity and decorum on the University Campus, all male and female students are required to be dressed in a decent and appropriate manner. The University shall take a particularly stern view of any kind of immodest and revealing clothes.
- The Student ID Card must be displayed while attending class.
- Cheating, plagiarism, offensive language and disruptive behavior will be addressed according to policies for academic misconduct mentioned in the Students' Handbook.

COURSE OBJECTIVE:

This course is built upon the mathematical concepts, principles and techniques that are useful in business management. The main objectives of the course are to enhance students' competency in application of mathematical concepts in solving business management problems and to improve their level of quantitative approach.

LEARNING OUTCOMES:

In this course Mathematical concepts and problem solving skills will be emphasized. The student will be required to develop the ability to manipulate numbers and algebraic equations, including simple proofs. The student will learn to transform word problems into mathematical notation to solve the mathematical problem analytically, and then to express the solution in an understandable form. This "mathematical model-building" approach will develop analytical and abstract reasoning ability.

TEACHING METHODOLOGY:

- Lectures
- Assignments
- Quizzes

PERFORMANCE REQUIREMENTS:

Complying with the course requirements with active class participation and timely submission of assignments.

MATERIAL / RESOURCES: RECOMMENDED TEXTS:

1. Applied Mathematics for Business, Economics and The Social Science.
By: Frank S. Budnick 4th Edition.
2. Bowen: Mathematics with Applications in Management and Economics

REFERENCE BOOKS:

1. Intermediate Algebra By Raymond A. Barnett.
2. Algebra for college student by Keedy Bellinger Rudolp.
3. Beginning Algebra by Alfonse Gobran.
4. Additional Mathematics Volume I by Cheah Tat Huat,
Tan Beng Theam, Khor Garkim.
5. Algebra for College Students, Eight Edition by Jerome E. Haufmann
and Karen L. Schwitters

Compulsory Reading:

- i. Economic & Business Review (DAWN)
- ii. Pakistan & Gulf Economist (PAGE)

EVALUATION METHODS AND ASSIGNMENTS:

- Quizzes will be given in every class based upon the lesson taught in the previous session. The teacher will mark and return them to the students in the same/next class.
- Students who maintain 100% attendance in a minimum course load of five will be awarded a certificate and his/her name/picture will be placed on the notice board
- Class Assignments will be given regularly.
- Class participation
- Portfolios should be maintained by students of all their assignments, quizzes, /presentation, etc. The portfolios must be submitted to the instructor in the 14th class. The portfolios will be returned to the students prior to the final examination.
- Mid-Term and Final Examination
- Final exams will comprise questions based on the entire syllabus, including the teaching done before the Mid-Term Exam.
- **Report:** The students will be assigned, individually, or in groups to write term paper / report based on visit to the corporate entities / markets and discussions with professionals and practitioners. All such visits will be undertaken through official

transmittal letters to be issued by the University on the request of students and / or faculty.

GRADING:

*	Quizzes.....	10%
*	Assignment.....	15%
*	Class Participation.....	05%
*	Mid-term Examination.....	30%
*	Final Examination	40%

COURSE CONTENTS SESSION WISE

WEEK – I Preliminaries

- First-Degree Equations in One variable
- Equations and Their properties
- Solving First-Degree Equation in One Variable
- Second-Degree Equations in One Variable
- Solving Quadratic Equations
- Inequalities
- Interval Notation
- Solving Inequalities
- Second-Degree Inequalities
- Absolute Value Relationships
- Solving Equations and Inequalities Involving Absolute Values
- The Cartesian Plane
- The Midpoint Formula
- The Distance Formula

WEEK – II Linear Equations – I

- General Form Representation Using Linear Equations
- Linear Equations With n Variables
- Graphical Characteristics

WEEK – III Linear Equations - II

- Characteristics of Linear Equations
- Slope-Intercept Form
- Determining the Equation of a Straight Line

WEEK – IV Systems of Linear Equations

- Two-Variable Systems of Equations
- Graphical Analysis
- Graphical Solutions
- The Elimination Procedure
- (m X 2) Systems, $m > 2$
- Graphical Analysis for Three-Variable System
- Gaussian Elimination Procedure for (3 X 3) System
- Fewer Than Three Equations
- N-Variable System, $n > 3$

WEEK – V Mathematical Functions

- Functions Defined
- The Nature and Notation of Functions
- Domain and Range Considerations
- Restricted Domain and Range
- Multivariate Functions
- Constant Functions
- Linear Functions
- Quadratic Functions
- Cubic Functions
- Polynomial Functions
- Rational Functions
- Combinations of Functions
- Composite Functions
- Graphical Representation of Functions

WEEK – VI Linear Functions : Applications

- Linear Cost Functions
- Linear Revenue Function
- Linear Profit Functions

WEEK – VII Linear Programing

WEEK – VIII MID-TERM EXAMINATION

WEEK – IX Differentiation

- Limits and Functions
- Average Rate of Change
- Instantaneous Rate of Change
- Rules of Differentiation
- Higher-Order Derivatives

WEEK – X Integration

- Antiderivative Concept
- Rules of Integration
- Definite Integrals

WEEK – XI Matrix Algebra

- Introduction to Matrices
- Types of Matrices
- Matrix Operation
- Properties of Determinants
- Cramer’s Rule
- Inverse of a Matrix

WEEK – XII Quadratic and Polynomial Functions

- Quadratic Functions: Applications
- Polynomial Functions Applications

WEEK – XIII Exponential and Logarithmic Functions

- Characteristics of Exponential Functions
- Base e - Exponential Functions
- Conversion to Base e - Functions
- Logarithms
- Properties of Logarithms
- Solving Logarithmic and Exponential Equations
- Logarithmic Functions

WEEK – XIV Mathematics of Finance

- Interest and Its Computation
- Single Payment Computations
- Annuities and Present Value
- Annuities and Their Present Value
- Cost-Benefit Analysis

WEEK – XV Calculus Application

WEEK – XVI FINAL EXAMINATION

-----*For Office Use Only*-----

Dean: : _____ Date: ____ / ____ / 2019

Head of Department: : _____ Date: ____ / ____ / 2019

Faculty Member: : _____ Date: ____ / ____ / 2019

Uploaded on the website by: _____ Date: ____ / ____ / 2019