



**Forman Christian College, Lahore**  
(A Chartered University)  
**Department of Mathematics**  
Spring 2023

**Instructor Information:**

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**Course Information:**

Course title: Quantitative Skills (MATH-100)  
Credit hours: 3  
Class timings: MWF 8:00am – 8:50am  
Room: S-413  
Section: A  
Pre-requisite: None

**Recommended Text:**

Mathematics, Application and Connection Course 2, McGraw Hill Publishing.  
Quantitative skills portion of Barron's GRE.  
Basic Business Mathematics, Schaum's outlines Eugene Don and Joel Lerner.  
New Syllabus Mathematics 1 – 3, Oxford University Press

**Resources:**

Video lectures and Lecture notes will be uploaded on Moodle

**Course Contents:**

This is a general education course for Mathematics. This course will provide the basic knowledge of daily life Mathematics. Topics include Basic Algebra and number theory, rounding, estimating and scientific notation, fractions, algebraic expressions, factorization, solving equations, simultaneous equations and application to daily life problems, quadratic equations, percentage (profit, Loss, discount, Simple and compound interest, commission and taxation), Ratio and Proportion, work problems, distance problems (time, speed and distance), basic geometry, mean, median, mode and their applications in real life.

**Course Objectives:**

The course will help students to:

- Develop quantitative skills and apply them to other disciplines.
- Recognize and utilize the logical understanding in mathematics
- demonstrate competence in the use of numerical, graphical, and algebraic representations.
- Understand the basic concepts of geometry and their applications to daily life.
- Use mathematics and algebra to formulate and solve problems they will experience in their lives.

**Learning Outcomes:**

Students will be able to

- Develop and strengthen quantitative reasoning skills and apply them to other disciplines.
- Recognize and utilize the logical understanding in mathematics.
- Acquire and develop a mathematical sense, or intuition.
- Analyze, model and interpret “real-world” problems in mathematical terms.
- Define and understand basic concepts of geometry.

**Course Requirements:**

- The semester will start fully in-person mode so there will be in class lectures accompanied by notes on Moodle.
- Students are expected to attend every class. Students must arrive at class on time, should remain in class for the entire class period and mobile phone should be switched off or on silence. Note that 5% marks are reserved for attendance, behavior and class participation. If a student arrives more than 5 minutes late or leave class during lecture or use mobile in class, he/she will be marked absent. **Minimum 70% attendance is required to appear in final exam.**
- Assignments will be conducted on Moodle.
- Quiz, mid-term and final will be taken on-campus.
- Academic dishonesty or cheating will result in zero points and will be referred to AIC (Academic Integrity Committee) at FCC for necessary action.

**Assessment:**

- Course assessment will be through quizzes; attendance, behavior and class participation; assignments; midterm and final exam.
- Quizzes, midterm and Final exam will be conducted on campus. There is no make up for the missed quizzes and assignments. Make up for quizzes, midterm and final exam is possible only under extremes cases if a student provides strong documentary evidence. In case of make-up exam there will be a 0-20% deduction in marks depending upon case to case basis.

**Course Evaluation:** Grading will be based on following criteria:

Quizzes (3)	15%
Attendance/ Class Participation and behavior	5%
Assignments	10%
Midterm	30%
Final Exam	40%

<b><u>Grades</u></b>	<b><u>Quality Points</u></b>	<b><u>Numerical Value</u></b>	<b><u>Meaning</u></b>
A	4.00	93-100	Superior
A-	3.70s	90-92	
B+	3.30	87-89	
B	3.00	83-86	Good
B-	2.70	80-82	
C+	2.30	77-79	
C	2.00	73-76	Satisfactory
C-	1.70	70-72	
D+	1.30	67-69	
D	1.00	60-66	Passing
F	0.00	59 or below	Failing

<b>Weeks</b>	<b>Topics</b>	<b>Assessments</b>
<b>(1)</b>	<p>Discussion of Course Plan: course introduction, policies, requirements and grading criteria.</p> <p>Whole Numbers and Decimals: whole numbers, decimals, operations (addition, subtraction, multiplication, division), order of operations, properties of equality, addition and multiplication.</p> <p>Positive and Negative Numbers: operations, comparing and ordering of numbers, graph of a number, absolute value of a number, opposite numbers.</p>	
<b>(2)</b>	<p>Number Theory: divisibility, even and odd numbers, factors, prime and composite numbers, Prime factorizations, common factor, greatest common factor (GCF), common multiple, least common multiple (LCM).</p> <p>Exponents, Scientific Notation</p> <p>Algebraic Expressions</p>	
<b>(3)</b>	Fractions: numerical and algebraic fractions, operations in fractions and mixed numbers	Quiz-1
<b>(4)</b>	Solving linear equations and their applications to daily life problems	
<b>(5)</b>	Squares and Square Roots Factorization.	
<b>(6)</b>	Solving Simultaneous equations and their applications to daily life problems.	Assignment 1
<b>(7)</b>	Percentage: conversions, direct and indirect percentage.	Quiz-1
<b>(8)</b>	Percentage continued: Profit and loss and discount	Mid-term exam
<b>(9)</b>	Percentage continued: simple and compound interest, taxation and commission	

(10)	Ratios and Proportions	Quiz-3
(11)	Quadratic Equations	
(12)	Mean, Median, Mode, and their applications.	Assignment 2
(13)	Distance Problems, Average of two or more speeds	
(14)	Work problems	Quiz-4
(15)	Basic Geometry: Area and Perimeter of simple and compound figures.	
(16)	<b>Final exams/assessments start. Date will be announced later.</b>	Final Exams