



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

Instructor Information

Asim Nadeem

Assistant Professor

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Office Hours: Monday to Friday: 11:00 AM – 12:00 PM

Online Office Hours: All days: 9 PM to 11 PM (Text / WhatsApp / E-mail)

Course Information:

Fall 2021

Quantitative Skills

MATH-100 B (face to face + online)

3 credits

Prerequisite: None

Room # S- 410

Timing: Mon, Wed, Fri: 09:00 ---- 09:50

Recommended Text:

(Book-1) Mathematics, *McGraw Hill Publishing*

(Book-2) Precalculus Functions and Graphs, Raymond A. Barnett and Michael R. Ziegler,
McGraw Hill Publishing

Resources

- On Campus classes.
- In case of online semester video lectures will be uploaded on YouTube.

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, Percentage, Profit, Loss, Simple and Compound interest, discounts, Commission, Ratio, Proportion, Zakat deduction, Unitary Methods, Time, Velocity, Distance, Geometry, Mean, Median, Mode and their applications in real life.

Course Objectives:

The objectives of the course are for students not only to know the mathematics of these concepts, but also to be able to apply the concepts to analyze and interpret information in business and financial application problems. It will challenge students' beliefs about mathematics and, hopefully, change their attitudes in a positive way. It will improve and increase students' quantitative literacy and ability to independently increase their own understanding of mathematics. It will provide students with an opportunity to experience mathematics as an intellectual exercise and a way of thinking, and to appreciate the visual and intellectual beauty of mathematics.

Students successfully completing the course should be reasonably proficient solving quantitative problems, they will experience in their lives. They will demonstrate competence in the use of numerical, graphical, and algebraic representations. Students will demonstrate the ability to interpret data, analyze graphical information and communicate solutions in written and oral

form. Students will demonstrate proficiency in the use of mathematics and algebra to formulate and solve problems.

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.
- identify, describe and apply geometrical models to real world situations.
- Formulate problems mathematically and solve them.

Course Requirements:

- 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. If a student arrives more than 10 minutes late or leave class during lecture or use mobile in class, he/she will be marked absent.
- In case of online semester, students are expected to watch every video lecture and read the lecture notes uploaded on Moodle. Off-campus students can discuss their queries/ questions in the given online office hours.
- Course assessment will be through **quizzes, attendance, behavior, class participation, assignments, midterm, and final exam.**
- Quizzes, Mid-term exam and final exam will be conducted on campus. Students will submit homework on Moodle. There is **no make up** for the **messed quizzes** and **homework**. Make up for 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.
- Academic dishonesty or cheating will result in zero points (grade F) and will be referred to AIC (Academic Integrity Committee) at FCC for necessary action.

<u>Grades</u>	<u>Quality Points</u>	<u>Numerical Value</u>	<u>Meaning</u>
A	4.00	93-100	Superior
A-	3.70	90-92	
B+	3.30	87-89	
B	3.00	83-86	Good
B-	2.70	80-82	Fair
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

Course Evaluation:

Grading will be based on following criteria:

Quizzes	15 %
Homework	10%
Attendance, behavior and class participation	05%
Midterm	30%
Final	40%

Course Outline:

Week	Topics	ASSESSMENTS
1	Discussion of Course Plan: course introduction, policies, requirements and grading criteria. Basic Algebra and number theory. Fractions, proper fractions, improper fractions, mixed numbers and their applications.	
2	Rounding, Estimating, Scientific notation	
3	Decimals, Factorization	
4	Solving linear equations and word problems	QUIZ-1
5	Simultaneous equations (Two linear equations with two unknowns) and their applications to daily life.	
6	Percentage (conversions, one quantity as a percentage of another, percentage increase and decrease)	HW-1
7	Profit, loss, discount, simple and compound interest	
8	commission, property tax, sales tax and income tax	Midterm
9	Ratio (expressing as ratio, equivalent ratio, increase and decrease in a ratio)	
10	Proportion (direct and inverse)	
11	Solution of Quadratic Equations and their applications.	
12	Rate problems, Time problems, Distance problems (finding distance, time and average speed)	QUIZ-2
13	Work problems, Mixture Problem, Mean, Median, Mode, and their applications	
14	Basic geometry (Angles and its types, supplementary and complementary angles,	HW-2
15	Area and circumference of a circle, Area and perimeter of polygons, finding area of shaded regions, Pythagoras theorem)	