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Forman Christian College, Lahore
(A Chartered University)
Department of Mathematics
Fall 2021

Instructor Information:

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Course Information:

Course Title : Quantitative Skills
Course Code: MATH100
Section : F
Credit hours: 3
Prerequisite: None
Room # : S- 410
Timing : Tue, Thur: 11:00 am - 12:15 pm.

Recommended Text:

(Book-1) Mathematics, *McGraw Hill Publishing U.S.A.*
(Book-2) Precalculus Functions and Graphs, Raymond A. Barnett and Michael R. Ziegler, *McGraw Hill Publishing U.S.A.*

Reference Text:

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

Course Contents:

This is a general education course related to Science and Mathematics category. This course will provide the basic knowledge of daily life Mathematics. Topics include Basic Algebra, Percentage, Profit, Loss, Simple and Compound interest, Discount, Commission, Ratio and 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 for students are not only to know the above listed mathematical concepts, but also to be able to apply these concepts to analyze and interpret information in daily life, 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 their 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 in solving quantitative problems which 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 forms. Students will demonstrate proficiency in the use of Mathematics to formulate and solve problems.

Course Expectations:

- Students must arrive at class on time, should remain in class for the entire class period and mobile phones should be switched off. **All students whose attendance is less than 60% won't be allowed to take the final exam.** Note that there are **05 marks for attendance and in class participation,** if a student arrives more than 10 minutes late or leaves class during lecture or uses mobile phone in class, he/she will be marked absent. **Habitual late comers will not be allowed to enter the class after 10 minutes.** In case a late comer is not allowed to enter the class, he or she can see the professor in office hours for briefing about the lecture.
- Course assessment will be through quizzes, midterm, assignments, attendance & in class participation and final exam. All assignments are to be completed by the date mentioned on the assignment paper**. Late submission of assignment will result in deduction of points for the assignment**. **If needed, students may be asked to explain the submitted work**. There is no make up for missed quizzes but best 3 out of 4 will be counted. In extreme cases average marks for the missed quizzes might be given provided students should submit strong evidence **within 3 days** after missing the quiz. Make up for midterm and final exam. is possible only under extremes cases if student provides strong documentary evidence within **3 days after missing the Mid/Final exam.** In case of make up examination, there will be a 0-20% deduction in marks depending upon case to case. Medical certificate will be acceptable if it is verified by the medical officer of FCCU.
- **Academic dishonesty or cheating** will result in zero points (grade F) and will be referred to AIC (Academic Integrity Committee) at FCCU for necessary action. (Page 20 of 4-year Baccalaureate degree Program Catalog 2018-2019)

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.
- apply geometrical models to real world situations and solve daily life problems involving these models.
- apply the learned mathematical skills in real world situations e.g., while shopping they will be able to calculate the discounts offered and pay the exact amount.

Course Evaluation:

Grading will be based on following criteria:

Attendance & in class participation	05 %
Homework Assignments (3)	10%
Quizzes (3 out of 4)	15%
Mid Term	30%
Final Exam	40%

Grades	Quality Points	Numerical Value	Meaning
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 Outline

Week	Topics	Assessment
1 **Oct.05,07**	Discussion of Course Plan: Course introduction, Policies, Requirements and grading criteria, Number systems, LCM, HCF, Fractions: Proper, Improper, mixed , Algebraic fractions; Operations in fractions.	
2 **Oct.12,14**	Exponent, Round off, Estimation	
3 **Oct.19,21**	Scientific Notation, Decimals, Factorization	**Assignment-1**
4 **Oct.26,28**	Linear Equations in one variable and its applications.	**Quiz-1**
5 **Nov.02, 04**	Solution of simultaneous linear equations in two variables and their applications	
6 **Nov.09,11**	Percentage, changing percentage: to fraction and decimal and vice versa, “Real world” problems involving percentages.	**Quiz-2**
7	Profit & Loss, Simple interest	

Nov.16,18		
8 **Nov.30,** **Dec.02**	Compound interest, Taxation, Discount, Problems involving discount and taxation	**Mid-Term** **Dec.02**
9 **Dec.07,09**	Ratios and Proportions: ratios, direct and inverse proportions.	
10 **Dec.14,16**	Problems involving ratio and proportion, Solution of quadratic equation and its applications in daily life problems.	**Assigment-2**
11 **Dec. 21**	Applications of quadratic equation in daily life problems	
12 **Jan.04, 06**	Rate problems, Distance, Average speed, Time	**Quiz-3**
13 **Jan.11, 13**	Motion problems, Work problems, Mixture Problems.	
14 **Jan.18,20**	Mean, Median, Mode, and their applications.	**Assignment-3**
15 **Jan.25, 27**	Geometry: Perimeter, Circumference	
16 **Feb.01,03**	Geometry: Area, Problems involving area, revision	**Quiz-4**
	Final examination period is from 7th Feb. 2022 - 14th Feb. 2022. **Final examination will be taken from the whole syllabus.**	**Final Exam.**