

Course: MATH-100, Basic Mathematics

Credit Hours: 3

Level: Semester 2

Course Introduction:

The Quantitative Reasoning course incorporates problem-solving, critical thinking, and oral and written communication fluency. Approaches and methods used in the course include choosing and using appropriate mathematical models, the use of data, and the use of real-world applications.

Course Objectives:

This course aims to impart knowledge to students about the survey of modern quantitative techniques in a variety of disciplines. Critical thinking and mathematical/quantitative literacy are emphasized.

CLO No	Course Learning Outcomes	Bloom Taxonomy
CLO-1	Interpret and draw appropriate inferences from quantitative representations, such as formulas, graphs, or tables.	C2 (Understand)
CLO-2	Use algebraic, numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems.	C6 (Create)
CLO-3	Effectively illustrate quantitative analysis or solutions to mathematical problems in written or oral form.	C2 (Understand)

Course Contents

S. No	Weekly Distribution of Course
Week 1	Introductions:What is Quantitative Reasoning?
Week 2	Percentages, Fractions, and Decimals
Week 3	Using Percentages
Week 4	Scientific Notation and Conversions
Week 5	Rounding and Error
Week 6	Fundamentals of Statistics
Week 7	Reading Tables
Week 8	Qualitative vs. Quantitative Data
Week 9	Mid Term
Week 10	Correlation and Causality
Week 11	Characterizing Data
Week 12	Variation in Data
Week 13	Linear vs. Exponential
Week 14	Linear Functions
Week 15	Exponential Functions
Week 16	Practice Exercises
Week 17	Practice Exercises
Week 18	End Term

Recommended Books

- Bennett, J. O. & Briggs, W. L. (2022). Using and Understanding Mathematics: A Quantitative Approach-8th Edition. University of Colorado. Published by Pearson.
- Spiegelhalter, D. (2019). The Art of Statistics: How to Learn from Data.
- Fry, H. (2018). Hello World: Being Human in the Age of Algorithms.
- Hand, David J. (2016). Measurement: A Very Short Introduction.
- Ellenberg, J. (2014). How Not to Be Wrong: The Power of Mathematical Thinking.
- Strogatz, S. H. (2012) The Joy of x : A Guided Tour of Math, from One to Infinity.
- An Audio Book. Narrated by Yen, J. Published by Tantor Audio.