

Course Code 400.2	Quantitative Reasoning-II	Credit Hours: 03
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Logical and Critical Reasoning:

Logic, proposition, propositional equivalence, truth table, Conjunction, disjunction, negation, propositions, logical fallacies, tautologies and contradictions, logical equivalence, Venn diagram, components of critical thinking, observation, analysis, interpretation, reflection, evaluation, inference, scientific reasoning.

Mathematical Modelling and Analysis:

Introduction to deterministic models, linear and non-linear functions, system of linear equations, and application of derivatives, linear and exponential growth decay model.

Statistical Modelling and Analysis:

Introduction to probabilistic models, simple linear regression model, introduction to stochastic models, correlation analysis, scatter plot, basics of estimation, confidence interval, ANOVA, testing of hypothesis (z-test, t-test), statistical inference.

Recommended Books:

1. Bennett.J& Briggs.W. (2018). Using & Understanding Mathematics: A Quantitative Reasoning Approach, 7th edition, Pearson.
2. Frank S Budnick. (1993). Applied Mathematics for Business, Economics, and the Social Sciences, 4th edition, McGraw Hill.
3. Salvatore J. Babones. (2013), Applied Statistical Modeling, 1st edition, SAGE Publications.
4. Susanna S. Epp. (2010). Discrete Mathematics with Applications, 4th edition, Cengage Learning.
5. William Fox. (2017). Mathematical Modeling for Business Analytics, 1st edition, CRC Press.