B.COM.
SEMESTER II
Commercial Arithmetic – II (CC 8)
(100 marks - 60 Lectures)

Unit I The Straight Line   (25marks - 12 hours)
- Rectangular Cartesian Co-ordinate System
- Distance formula, Section formula (Simple problems only)
- Slope and intercepts of a straight line
- Equations of lines parallel to the axes.
- Equations of lines in slope point form, two point form, slope intercept form, two intercept form
- General equation of a line, Parallel and perpendicular lines
- Intersection of lines
- Graphs of linear equations and inequalities
- Graphical solution of Linear Programming Problems with two variables only

Unit 2 Calculus I

(a) **Relations and Functions**   (5marks - 4 Lectures)
- Ordered pair
- Cartesian product
- Relation, Function – Domain, Co-domain, Range.

(b) **Limits and Continuity**   (5marks - 4 Lectures)
- Definition
- Operations of finding limits
- Algebra of limits
- Concept of continuity and examples

(c) **Derivatives and their Applications**   (25 marks - 12 Lectures)
- Concept of derivatives
- Standard forms
- Algebra of derivatives
- Derivatives of composite functions
- Higher order derivatives
- Applications – Total revenue function, Total cost function, Elasticity of demand and supply
- Increasing and decreasing function/sign of derivative (economic applications)
- Maxima and Minima (economic applications)

Unit III Calculus II

(a) **Integration and its Applications**   (15marks - 12 Lectures)
- Definition
- Standard forms x^n, e^x, a^x, $1/x$

- Integral of $f(x) + g(x)$ and $kf(x)$
- Integral of $(ax+b)^n$, e^{ax+b}, k^{ax+b}, $1/ax+b$
- Applications – Total revenue function, Total cost function
- Definite integration
- Area under a curve (formula only)
- Consumer's Surplus and Producer's Surplus

(b) Partial Derivatives   (5marks - 4 Lectures)

- Definition
- Partial derivatives of first and second order
- Economic applications: Demand function, Utility function, Production function

Unit IV Commercial Mathematics   (20marks - 12 Lectures)

- Ratio
- Proportion
- Percentage
- Discount – Trade Discount, Cash discount, Discount and profit.

References

1. Joshi N. and Chitale S.G., *A New Approach To Mathematical Techniques*, Sheth Publishers
2. Vaidya M.L., Deshpande A.V., Kumtha A.P., *Elementary Business Mathematics*, Vipul Prakashan
3. DikshitAmarnath, Jain Jinendra Kumar, *Business Mathematics*, Himalaya Publishing House
4. GoelAjayand GoelAlka, *Mathematics and Statistics*, Taxmann Allied Services
5. Vaidya M.V., KumthaA. P., *Business Mathematics*, Vipul Prakashan
6. ShahS., *Business Mathematics(for ICWAI International Course),* New Central Book Agency.
7. Abranches, M.E, *Mathematical Techniques*, Gracias Print Arts.