

# KOLHAN UNIVERSITY, CHAIBASA

## FYUGP SEMESTER –III UNDER NEP

### SEC-III (SKILL ENHANCEMENT COURSE)

#### Course Title: MATHEMATICAL & COMPUTATIONAL THINKING AND ANALYSIS

Total Marks: 75

CREDITS: 03

Pass Marks: 30

Total Lecture: 45 Hours

**UNIT I: Logic:** Introduction, Statement, Truth value of a statement, Negation of a statement, Compound or mixed statements. Logical Connectives and Tautologies, Implications / Conditional statements, Converse statement, Positive statement, Validating statement.

(10 Lecture hours)

**UNIT II: Elementary Arithmetic:** Number System and Rapid Method of Calculation, Approximation, Decimalisation, Ratio, Proportion.

**Advanced Arithmetic:** Percentages, Simple Interest, Compound Interest, Surface areas and volumes.

(10 Lecture hours)

**UNIT III: Mathematical Induction:** Introduction, Motivation, The Principle of Mathematical Induction, Progression: Elementary idea of A.P., G.P., and H.P.

(10 Lecture hours)

**UNIT IV: Statistics:** Definition of Statistics, Characteristics of Statistical data, Nature of Statistics, Limitation of Statistics, Collection of data, Diagrammatic presentation of data, Calculation of frequency distribution.

Measures of Central Tendency: Mean, Median, Mode, Quartiles, Deciles and percentiles.

Measures of dispersions: Range, Inter-quartile range, Quartile Deviation, Mean Deviation, Standard Deviation.

Measures of Skewness, Correlation, Probability.

(15 Lecture hours)

#### Suggested Books:

1. “Mathematical and Computational Thinking and Analysis”: Dr R. K. Tiwary, Dr. Y. K. Mishra & Dr. B. N. Gupta.
  2. “Arithmetic”: Lalji Prasad. Students’ Friends.
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