

SREE VAHINI INSTITUTE OF SCIENCE AND TECHNOLOGY

(AN AUTONOMOUS INSTITUTION) Approved by AICTE, New Delhi & Affiliated to JNTUK,
Kakinada Sal Vahini Nagar, NH-30, Tiruvuru - NTR Dist., Andhra Pradesh - 521235

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES

DEPARTMENT OF MATHEMATICS

MINUTES OF THE BOARD OF STUDIES (BOS) MEETING IN AY:24-25

Mode: Virtual Mode Date & Time: 24-04-2025 @ 11:00 AM

The Board of Studies meeting of the Department of Mathematics was held virtually on **24th April, 2025**. The primary agenda of this meeting was to frame, discuss, and finalize the curriculum structure and detailed syllabus for the newly introduced **BBA & BCA** programs for the academic year 2023-24, alongside reviewing existing regulations.

Agenda Points Discussed

- **Implementation of New Courses:** Detailed discussion on the allocation, course structures, and mathematical prerequisites for the newly introduced **BBA & BCA** streams.
- **Syllabus Formulation:** Approval of the comprehensive syllabus for Mathematics and allied skill-based laboratory courses for the current academic cycle.
- **Outcome-Based Education (OBE):** Formulation of Course Outcomes (COs) and their rigorous mapping with Program Outcomes (POs) along with relevant justifications.
- **Alignment with NEP:** Ensuring the implementation of the curriculum strictly complies with the guidelines of the New Education Policy (NEP).
- **Skill & Employability Enhancement:** Selection and approval of highly collaborative communication and mathematical software toolkits to maximize student involvement and readiness.

MINUTES OF MEETING:SYLLABUS REVIEW FOR I BCA(NUMERICAL METHODS AND STATISTICAL METHODS) &I BBA (BUSINESS STATISTICS AND LOGIC)

1. Welcome and Course Objectives

The meeting commenced with an overview of the primary objectives for the Numerical and Statistical Methods course. The core goals identified include:

- Equipping students to perform error analysis for arithmetic operations.
- Demonstrating the practical application of various numerical methods.
- Providing a foundational understanding of interpolation and numerical integration derivation/usage.
- Imparting essential statistical techniques and reinforcing understanding via laboratory activities.

General Suggestions Given by Experts

- **Student-Centric Classrooms:** In alignment with previous cycles, interactive case studies must dominate practical sessions, ensuring student involvement remains significantly higher than direct lecturing.
- **Continuous Evaluation:** Evaluation criteria within the newly added Communication Skills Lab must prioritize real-time performance assessment across standard templates like mock interviews and presentations.

Decision: The proposed curriculum layout, recommended literature sets, software distributions, and target evaluation matrices were formally noted, processed, and approved by the Board of Studies.

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I Year I Semester

NUMERICAL AND STATISTICAL METHODS

The main objectives of the course are:

UNIT 1:

- To learn how to perform error analysis for arithmetic operations.
- To demonstrate working of various numerical methods.
- To provide a basic understanding of the derivation and use of methods of interpolation and numerical integration.
- To impart knowledge of various statistical techniques.
- To develop students understanding through laboratory activities to solve problems related to above stated concepts.

UNIT I:

Solution of equations (polynomial and transcendental equations) interval having methods, secant, Regula-Falsi, Newton-Raphson methods, Fixed point Iteration method.

UNIT II:

Solution of system of linear equations: Gauss-Elimination method, Gauss-Jordan, Gauss-Siedel iteration method, LU. Decomposition method, Eigen values and Eigen vectors of a square matrix.

UNIT III:

Interpolation: Forward and backward differences, Newton's forward and backward formula, Lagrange's interpolation and Lagrange's inverse interpolation formula. Numerical differentiation, integration Numerical differentiation forward and backward formula, Trapezoidal and Simpsons formulas.

UNIT IV:

Basic concepts and definition of statistics Mean Median, Mode, standard deviation coefficient of variation, skewness and kurtosis, Karl Pearson Correlation coefficient, Rank Correlation and illustrated examples.

UNIT V:

Probability: Basic concepts and definition of probability. Probability axioms, Conditional probability Addition and Multiplication theorem of probability (Based on set theory concepts), Bayes theorem, problems and applications.

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Text Books:

1. Sunil S. Patil Numerical and Statistical Methods EBPB.
2. S.S. Shastry Introductory methods of Numerical Analysis PHI (New Delhi).

Reference Books:

1. Gupta S.C & Kapuram VK Fundamentals of Mathematical Statistics.

BBA I Year I Semester

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Course Objectives:

1. To establish importance of logical reasoning in human inquiry.
2. To demonstrate data handling skills and summarize data with clarity
3. To extend an understanding of application of relevant concepts of Statistics to a given business scenario.
4. To understand business problems and make decisions using appropriate Statistical treatments. Statistical models and explain trends
5. To demonstrate the knowledge on the process of organizing a data and conduct

Unit-1

Central Tendency, Dispersion, Measures of Skewness and Kurtosis

Classification and tabulation of data, frequency distribution, diagrams and graphs, measure of central tendency arithmetic mean, weighted arithmetic mean, median, mode, geometric mean and harmonic mean (theory only) and meaning of partition values quartiles, deciles, percentiles

Unit-11

Measures of dispersion

Range, quartile deviation, mean deviation from mean and median, standard deviation and coefficient of variation. Skewness meaning, difference between dispersion and. Skewness, Karl Pearson's and Bowley's measures of Skewness, concept of kurtosis, types of kurtoses and importance.

Unit-III Correlation and Regression

Meaning, definition and use of correlation, covariance, scatter diagram, types of correlation, Karl Pearson's correlation coefficient, Spearman's Rank correlation. coefficient, probable error, regression meaning and utility of regression analysis, comparison between correlation and regression, regression lines x on y, y on x, regression equations and regression coefficients meaning,

Unit-IV Probability and Probability distributions

Introduction to probability, basic concepts of probability-classical definition, addition and multiplication rules, probability distributions-binomial, poisson and normal distributions, expected value.

Unit-V Introduction to Logic

Number series, coding decoding and odd man out series, direction sense test, seating arrangements-linear and circular, blood relations, arithmetic and geometric progressions, Inductive and deductive reasoning

Course Outcomes:

- CO 1 Demonstrate data handling skills with clarity and logical reasoning
- CO2 Outline the relevant concepts of Statistics to a given context/business scenario
- CO 3 Organize business data and conduct statistical treatment.
- CO 4 Evaluate and interpret data using appropriate statistical techniques
- CO 5 Explain data trends using appropriate statistical models.

Text Books:

1. Levin R. L & Rubin D. S. Statistics for Managerment. Delhi: Pearson.
2. Pilki & Bagavathi. Statistics, Theory and Practice, S Chand Publishing
3. SP Gupta. Statistical Methods, Sultan Chand and Sons
4. SC Gupta. Fundamentals of Statistics, Himalaya Publishing House
5. Sharma, Gupta, The Practice of Business Statistics, Khanna Publishing House.
6. Sharma J.K. Business Statistics, Vikas Publishing House

Reference Books:

1. Fildes, R., & Goodwin, P. (2007). Against your better judgment? How organizations can improve their use of management judgment in forecasting. *Interfaces*, 37(6), 570-576. 1
2. Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? *Behavioral and Brain Sciences*, 23(5), 2 645-665.

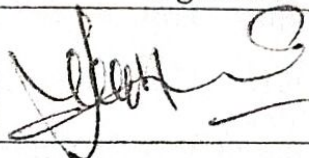
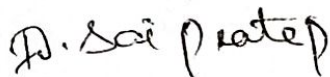
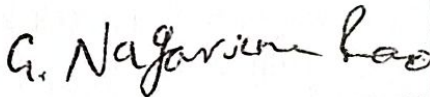
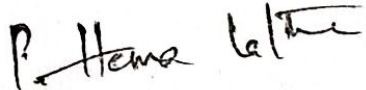
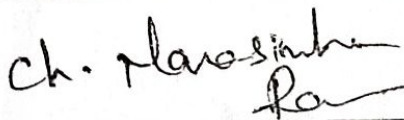
Practical Component

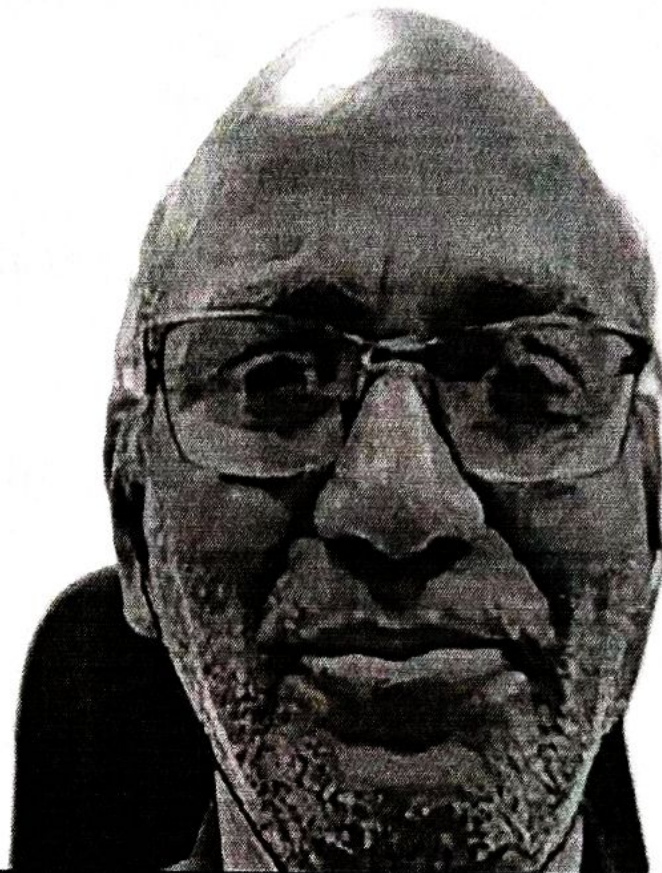
1 Understanding basic concepts of statistics is possible by incorporating data sets from real life situations. In every unit one hour could be set aside to handle realistic data such as number of steps taken on a day, daily expenditures of students, air quality index in various months in various cities, stock prices etc. using EXCEL and make their interpretations. Students may make short presentations of their analysis to add to the learning experience

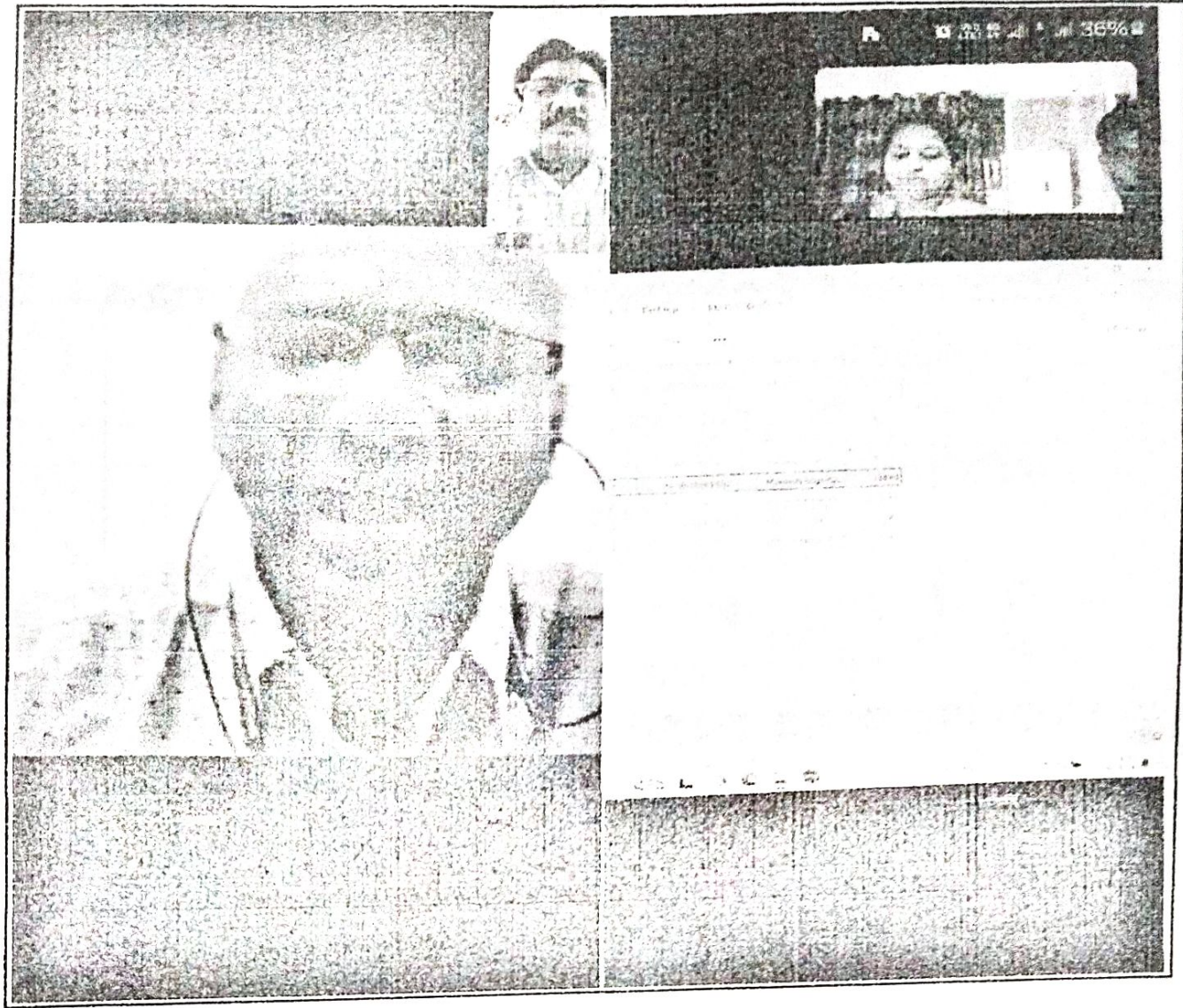
Department of Mathematics

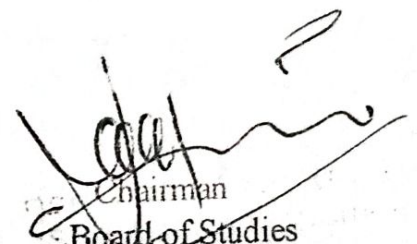
Department Composition of Board of Studies

The following members are drafted as internal members to Board of Studies for the Department of Mathematics

S.No	Name and Designation of Member	Signature
1	Chairperson : Mr. V J Moses , Assoc. Professor & HOD	
UNIVERSITY NOMINEE		
1	Dr. Kasi Viswanadham KNS Professor NIT Warangal Mobile :9866028867 Email :kasi@nitw.ac.in	Present (Online)
SUBJECT EXPERT		
2	Dr. V.Ravindranath Head&ProfessorofMathematics. JNTUKakinada. Andhra Pradesh Mobile: 9948083686., Email Id: Nathvr@yahoo.com	Present (Online)
FACULTY (INTERNAL) MEMBERS		
1	Mr. D. Sai Pratap Kumar HoD&Assoc.Professor	
2	Mr. Ch.Someswararao , Asst Professor	
3	Mr. G .Nagarjuna , Asst.Professor	
4	Smt P Hemalatha , Asst. Professor	
5	Mr.Ch.Narasimharao , Asst. Professor	






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Board of Studies
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Principal
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Dean Academics