



ADD ON COURSE ON PRELIMINARIES OF APPLIED MATHEMATICS AND STATISTICS

Organized by
Department of Mathematics and Statistics,
Mangaldai College

COURSE COMMITTEE:

Course Mentor:

**Dr. Kamala Kanta Borah, Principal,
Mangaldai College**

Joint Course Coordinators:

**Mr. Debajit Nath, HOD Department of
Mathematics, Mangaldai College**

**Dr. Ranjita Goswami, HOD Department
of Statistics, Mangaldai College**

Members:

**Mr. Dimbeswar Kalita, Asstt. Professor,
Department of Mathematics,
Mangaldai College**

**Mr. Pranab Das, Asstt. Professor,
Department of Statistics, Mangaldai
College**

**Mr. Jintu Mani Nath, Asstt. Professor,
Department of Mathematics,
Mangaldai College**

INTRODUCTION

Applied mathematics and statistics are disciplines devoted to the use of mathematical methods and reasoning to solve real-world problems of a scientific or decision-making nature in a wide variety of subjects, principally (but not exclusively) in engineering, medicine, the physical and biological sciences, and the social sciences. Applied mathematical modeling often involves the use of systems of differential equations to describe and predict the behavior of complex real-world systems that unfold dynamically in time.

PROGRAMME OBJECTIVES:

Student who choose Add on course Programme in Mathematics and Statistics, develop the ability to think critically, logically and analytically. The Programme covers Calculus, Differential equation and its application, Matrices and its application and Descriptive Statistics and numerical analysis in various domains.

Syllabus of the Course

THEORY

UNIT 1: Derivative of various functions and its basic application, Integration of various functions and its applications, Differential equations and its applications.

UNIT 2: Definition and Types of Matrices, Algebra of Matrices, Minor, Cofactor and inverse of Matrices, Determinant.

UNIT 3: Measures of central tendency, Measures of Dispersion, Numerical Analysis.

PRACTICALS

List of Practicals (using any software)

1. Plotting of second order solution family of differential equation.
2. Plotting of third order solution family of differential equation.
3. Find the operations (transpose, determinant, inverse etc.) of distinct matrices.
4. Developing the following Numerical programs:
 - Bisection Method
 - Newton Raphson Method
 - Secant Method

STUDENT PARTICIPANTS:

The course is open to all students of Mangaldai College pursuing under graduation.

DURATION OF THE COURSE:

The duration of the course is of three months with 30 hours with two classes in a week.

Course Fee: RS. 300/-

For more information contact:

**Jintu Mani Nath
7002141437**