

ADD ON COURSE ON
**“PRELIMINARIES OF APPLIED
MATHEMATICS”**

Organized by

Department of Mathematics, Mangaldai College

Session: 2021-22

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 chooses 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 applications.

PROGRAMME LEARNING OUTCOMES:

- 1) Communicate Mathematics effectively by oral, written and computational.
- 2) Create Mathematics ideas from basic axioms.
- 3) Identify applications of Mathematics in other disciplines.

DURATION OF THE COURSE:

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

STUDENT PARTICIPANTS:

The course is open to all students of Mangaldai College pursuing under graduation. Students need to apply for registration in the course and a nominal fee will be charged from students as decided by the course committee.

COURSE COMMITTEE:

Joint Course Coordinators:

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

Mr. Jintu Mani Nath, Assistant Professor, Dept. of Mathematics, Mangaldai College

Member:

Mr. Dimbeswar Kalita, Assistant Professor, Department of Mathematics, Mangaldai College

Course Fee: Rs. 300/-

SYLLABUS OF THE COURSE

Theory (Marks: 60)

UNIT 1:

30

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

UNIT 2:

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Definition and types of Matrices, Algebra of Matrices, Minor, Cofactor and inverse of Matrices, Determinant.

Practicals (Marks: 40)

List of Practical (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.