Activity Report

of

Application of Mathematics in Engineering

A.Y. 2023-24

SANDIP FOUNDATION

Organized by ,

Sandip Foundation's
Department of Engineering Sciences and Humanities
Sandip Institute of Technology and Research Centre, Nashik (MS)
DTE Code: 5109

Date : 25th August 2023

Name of Program : Application of Mathematics in Engg.

Resource Person: Dr. Renu Pathak

Event Coordinator : Assistant Prof.Atul A. Minde

Participants : F.Y.B.Tech students (ESH Department)

No. of Participants : 240

Aim : The aim of this activity is to demonstrate the practical applications of mathematics in engineering, highlighting its importance in solving real-world engineering problems. By engaging in various hands-on activities and simulations, the goal is to enhance students' understanding of mathematical concepts and their relevance in the field of engineering

Objective :

- **To Illustrate Mathematical Concepts:** Utilize practical examples to illustrate mathematical concepts such as calculus, algebra, geometry, and statistics, emphasizing their relevance in engineering calculations and designs.
- **To Enhance Problem-Solving Skills:** Develop problem-solving skills by applying mathematical techniques to engineering problems, encouraging students to analyze, strategize, and optimize solutions.
- **To Foster Interdisciplinary Learning:** Promote interdisciplinary learning by integrating mathematics with engineering principles, enabling students to appreciate the interconnectedness of different fields of study.
- **To Encourage Critical Thinking:** Encourage critical thinking and analytical reasoning through the application of mathematical models, simulations, and experiments in engineering contexts.
- **To Improve Communication Skills:** Enhance students' ability to communicate complex engineering concepts and solutions effectively, emphasizing the importance of clear and concise mathematical representation in engineering reports and presentations.

Outcomes :

- **Simulation Exercises:** Engaged students in simulation exercises using software tools to solve engineering problems involving fluid dynamics, structural analysis, and electrical circuits. Outcome: Enhanced problem-solving skills and familiarity with simulation techniques.
- **Collaborative Projects:** Assigned interdisciplinary projects where engineering students collaborated with mathematics majors. Outcome: Encouraged teamwork

and exposed students to diverse perspectives, fostering a holistic approach to problem-solving.

- **Case Studies:** Analyzed case studies of engineering failures and successes, emphasizing the role of mathematical analysis in identifying root causes and designing effective solutions. Outcome: Improved critical thinking skills and awareness of the consequences of mathematical inaccuracies in engineering applications.
- **Interactive Workshops:** Conducted interactive workshops where students solved engineering problems in real-time, encouraging active participation and immediate application of mathematical concepts. Outcome: Enhanced students' confidence in applying mathematics to engineering challenges.

Summary of Program:

Through these activities, students gained a deeper understanding of the vital role mathematics plays in engineering. They developed improved problem-solving skills, enhanced their critical thinking abilities, and learned to appreciate the interdisciplinary nature of modern engineering. Moreover, the hands-on approach and real-world examples significantly contributed to achieving the objectives of the activity, preparing students for future engineering challenges in the professional arena.

Photographs:

Felicitation of Dr. Renu pathak Ma'am

Beneficiary Students of F.Y.B.Tech

Assitant Prof. A.A.Minde
Event Coordinator

Prof. J. M . Shah
HOD, ESH