

Report

Compact Courses in Foundations of Mathematics

Professor R. Balakrishnan Endowment Trust (RBET), Tiruchirappalli and The (Indian) Mathematics Consortium (TMC)

Topic: Differential Equations and their Applications in Science and Engineering

Date: 10-12th February, 2025

Regional Coordinator: Dr. Deepti Jain, Associate Professor
Department of Mathematics
Sri Venkateswara College, University of Delhi, Delhi

Organizing University: Shri Vishwakarma Skill University, Palwal, Haryana

Resource Person: Dr. Sachin Sharma,
Assistant Professor (Mathematics)
Netaji Subhas University of Technology, Delhi

Local Organizer: Dr. Mohit Kumar Srivastav
Skill Assistant Professor (Mathematics)
Shri Vishwakarma Skill University, Palwal, Haryana

SHRI VISHWAKARMA SKILL UNIVERSITY
(1st Government Skill University of India, set up by Government of Haryana)

3-days workshop on
"Differential Equations and their Applications in Science & Engineering"

10th - 12th Feb. 2025
3W, Pushpagiri Bhawan

Inaugural Ceremony
Chief Guest

Prof. S. K. Tomar
Hon'ble VC - SVSU

ORGANIZER

Skill Department of Science and Computation under the Aegis of IQAC, SVSU

Prof. R. Balakrishnan Endowment Trust and The Mathematics Consortium

SHRI VISHWAKARMA SKILL UNIVERSITY
(1st Government Skill University of India, set up by the Government of Haryana)

3-days workshop on
"Differential Equations and their Applications in Science & Engineering"

10th - 12th Feb. 2025, 11 AM
3W, Pushpagiri Bhawan

Resource Person
Dr Sachin Sharma
Assistant Professor (Mathematics)
NSUT, Delhi

ORGANIZER

Skill Department of Science and Computation under the Aegis of IQAC, SVSU

Prof. R. Balakrishnan Endowment Trust and The Mathematics Consortium

Syllabus of Compact Course funded by RBET and TMC

Topic: Differential Equations and Their Applications in Science and Engineering

S.No.	Date	Topic	Details
1	10.02.2025	First order ordinary differential equations (ODE)	<ol style="list-style-type: none">1. Definition of ordinary and partial differential equations2. Formation of ODE, order and degree3. Solutions of first order differential equations: separation of variables, homogeneous and linear ODE.4. Application of first order ODE in engineering <p>Tutorial: Several examples based on above topics will be discussed</p>
2	11.02.2025	Higher order linear differential equations	<ol style="list-style-type: none">1. Linear differential equations with constant coefficients and its applications2. Euler-Cauchy differential equations <p>Tutorial: Several examples based on above topics will be discussed</p>
3	12.02.2025	Numerical Solutions of ordinary differential equations	<ol style="list-style-type: none">1. Euler methods, Euler Modified method2. Runge-Kutta method <p>Tutorial: MATLAB program based on the above topic</p>