

Course Content

1

Introduction to SOLIDWORKS

- Sketching
- Feature-Based Modeling
- Part Design
- Assembly Modeling
- Engineering Drawings.

2

Advanced Design & Simulation with SOLIDWORKS

- Surface Modeling
- Sheet Metal Design
- Motion Analysis
- Basic Simulation
- Design Optimization

3

Introduction to COMSOL Multiphysics

- Geometry Creation and Import
- Meshing
- Physics Setup
- Solver Configuration
- Multiphysics Coupling
- Post-Processing Techniques.

4

Application of COMSOL Multiphysics

- Automotive Applications
- Biomedical Applications
- Microwave Materials Processing
- Non-Conventional Machining
- Fluid-Structure Interaction (FSI)

Scan/Click to register



or

[Registration Link](#)

Organizing Committee

Patron

Prof. K. Umamaheshwar Rao
Director, NIT Rourkela

Chairman

Prof. Saroj Kumar Patel
Professor & HoD
Department of Mechanical Engineering,
NIT Rourkela

Coordinator

Dr. Ashirbad Jana
Assistant Professor
Department of Mechanical Engineering,
NIT Rourkela

Dr. Gaurav Kumar
Assistant Professor
Department of Mechanical Engineering,
NIT Rourkela

Dr. Suraj Kumar Behera
Associate Professor
Department of Mechanical Engineering,
NIT Rourkela

Contact Details

Ph. No.: +91 7896889268/ 8791675692
Email: janaashirbad@nitrkl.ac.in



Five-Days International Workshop

on

Design, Simulate, and Innovate

with

SOLIDWORKS & COMSOL Multiphysics

during

29th June – 03rd July 2026

(Physical / Virtual Mode)



SOLIDWORKS

COMSOL Multiphysics

Organized by

**Department of Mechanical Engineering,
National Institute of Technology, Rourkela,
Odisha-769008**



Step Up Your CAD Career —
CSWA & CSWP Coupons
Absolutely Free!

About NIT Rourkela

The National Institute of Technology Rourkela (NIT Rourkela), formerly known as Regional Engineering College until its renaming on 26th June 2002, is a premier government-funded institution committed to excellence in engineering, science, and technology. Situated in the steel city of Rourkela, Odisha, India, it is one of the 31 NIT and is recognized as an Institute of National Importance under the National Institutes of Technology Act, 2007. NIT Rourkela has achieved notable recognition in national and global rankings, securing the 13th position in the NIRF Rankings 2025 for engineering institutions in India, 396th in the QS Asia University Rankings 2025, and 167th in the QS World University Sustainability Rankings 2025 (Asia region). It is also placed within the 401–600 band in the Times Higher Education World University Rankings (Engineering) for 2025–26. The institute aims to emerge as a globally recognized center of excellence in education and research, contributing to society through knowledge and innovation, while establishing itself as a preferred destination for undergraduate and postgraduate studies.

About ME Department

The Mechanical Engineering Department of NIT, Rourkela is known for research in diverse fields. The main foci of research are mechanical vibration, robotics, CAD/CAM, precision engineering, metal forming, Machining, CFD, Industrial refrigeration and Cryogenics. The academic programme of the department reflects not only the core areas of Mechanical Engineering but also the research specialization of the faculty. The department at present has over one hundred research scholars pursuing projects in diverse fields. The faculty is organized into three divisions i.e., thermal, design and production engineering and six groups. All the groups are working in close co-operation while retaining individual identities. Many Research and Development projects being pursued by the faculty are sponsored by Government agencies and private industries. Some of the major sponsors are BRNS, DST, DAE, CSIR, DRDO, BARC, ISRO and private industries.

About the Workshop

This 5-day workshop on Design, Simulate, and Innovate with SOLIDWORKS & COMSOL Multiphysics is designed to provide participants with a comprehensive understanding of modern engineering design and simulation practices. The program offers an integrated approach that combines computer-aided design (CAD) with advanced multiphysics analysis, enabling participants to develop efficient and optimized engineering solutions.

The workshop begins with the fundamentals of SOLIDWORKS, covering sketching, feature-based modeling, part design, assembly modeling, and engineering drawings. Participants will then progress to advanced design concepts including **surface modeling**, sheet metal design, **motion analysis**, basic simulation, and design optimization, equipping them with essential skills for product development and virtual prototyping.

Building on this foundation, the workshop introduces COMSOL Multiphysics, focusing on geometry creation, meshing, physics setup, and solver configuration. A key highlight of the program is **multiphysics coupling**, which enables the interaction of multiple physical phenomena—such as thermal, structural, and fluid domains—within a unified simulation environment. Participants will also learn post-processing techniques to interpret and visualize simulation results effectively.

The workshop further explores real-world applications of multiphysics simulation in areas such as automotive and biomedical engineering, microwave materials processing, non-conventional machining, and fluid–structure interaction (FSI). Through hands-on sessions and practical case studies, participants will gain the ability to design, simulate, and analyze complex engineering systems, preparing them for challenges in research, industry, and the evolving landscape of **Industry 4.0**.

Academicians from premier institutions like IITs, NITs, experts from Industries as well as R&D Organizations having expertise and experience in relevant domain knowledge are to be invited as Resource Person for this workshop.

Eligibility

The workshop is open for faculty members, research scholars, UG/ PG students, technical staff members of educational institutions, personnel from R&D sectors/ research laboratories & Industry.

Important details



Course Fee (Including GST)

Faculties/ Research Scholars/ Students/ Technical Staff Members from academic institute: **Rs. 590/-** (Including 18% GST)
Personnel from Industry and R&D units: **Rs. 1180/-** (Including 18% GST)



Online Payment Details

Account Name: CONTINUING EDUCATION, NIT ROURKELA
Payable Bank/ Branch: SBI, NIT Rourkela Campus
Account No.: **10138951784**
IFSC Code: SBIN0002109
MCIR No.: 769002007
SWIFT Code: SBININBB137



Scan for UPI payment



Certificate

E-Certificate will be issued upon participation in all the sessions.



**Last date of registration:
26/06/2026**