

DEPARTMENTS OF MECHANICAL AND CHEMICAL ENGINEERING

The Departments of Mechanical and Chemical Engineering at NIT Rourkela are premier centers for education and research. The Mechanical Engineering Department, comprising divisions in Design, Manufacturing, and Thermal Engineering, excels in vibrations, robotics, heat transfer, CFD, and cryogenics, while the Chemical Engineering Department focuses on process modeling, reaction engineering, and environmental systems. Both departments undertake major R&D projects funded by BRNS, DST, ARDB, BRFST, and HBL Power Systems, fostering innovation and interdisciplinary research in energy, environment, and advanced technologies.

ABOUT THE COURSE

The program offers comprehensive training on combustion phenomena, emission behaviour and carbon capture processes through both experimental demonstrations and CFD simulations. Participants will learn combustion process, pollutant formation, dispersion, and control strategies using ANSYS Fluent along with insights from practical experimental studies. The program is ideal for faculty, researchers, and industry professionals working in combustion, carbon capture, and environmental systems.

Coordinators

Dr. Jnana Ranjan Senapati, ME
Dr. Sushil Kumar Rathore, ME
Dr. Suman Ghosh, ME
Dr. Prateek Khatri, CH
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ABOUT NIT ROURKELA

The National Institute of Technology Rourkela (NIT Rourkela) is an Institute of National Importance, established under an Act of Parliament. It is committed to providing quality education in a diverse and multicultural environment. The institute's mission is to become an internationally recognized center of higher learning that serves as a source of knowledge and expertise for society, and a preferred destination for undergraduate and postgraduate studies. Its vision is to advance and disseminate knowledge in science and technology for the creation of wealth and the welfare of humanity.

NIT Rourkela offers undergraduate, postgraduate, and doctoral programs in 21 branches of engineering, along with active research centers engaged in consultancy and sponsored projects. The institute collaborates extensively with national agencies such as DST, DAE, CSIR, DRDO, BARC, and ISRO, as well as with leading private industries, to promote innovation and technological advancement.

NIT ROURKELA RANKINGS

Source: <https://nitrrkl.ac.in/About/Rankings>

2025	Ranked 13 in NIRF Engineering
2025	Ranked 34 in NIRF Overall
2025	Times Higher Education World University Ranking has placed NIT Rourkela at 601-800
2025	Times Higher Education Asia University Ranking has placed NIT Rourkela at 191
2025	Times Higher Education Impact Ranking has placed NIT Rourkela at 401-600

A FIVE DAYS SKILL / FACULTY DEVELOPMENT PROGRAM on

COMBUSTION AND EMISSION DYNAMICS STUDY WITH HANDS-ON ANSYS FLUENT EXERCISES

**Dec 10-14, 2025
(Online Mode)**

Patron

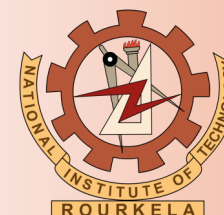
**Prof. K. Umamaheshwar Rao,
Director, NIT Rourkela**

Chairman

Prof. S. K. Patel, HOD-ME

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**Department of Mechanical Engineering
& Department Chemical Engineering
National Institute of Technology
Rourkela - 769008**



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COURSE CONTENT & TRAINING SESSION

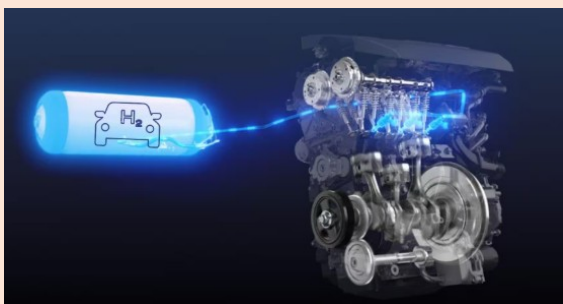
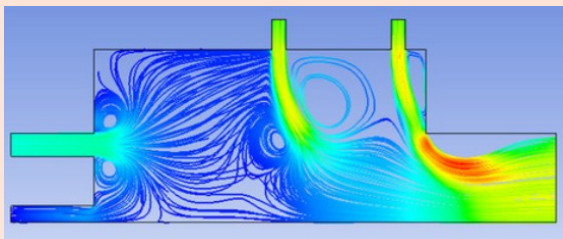
The course will cover the following major topics;

- Fundamentals of Combustion and Emission Dynamics – mechanisms of pollutant formation, transport, and carbon capture.
- Experimental Studies – hands-on demonstrations on combustion and emission measurement techniques.
- CFD Fundamentals – pre-processing, meshing, solver setup, and post-processing using ANSYS Fluent.
- Numerical Simulations – modeling of combustion, emission, and carbon capture processes.
- Case Studies and Validation – comparison of experimental and CFD results for emission control and optimization.

HANDS-ON SESSION BY EXPERT

FROM INDUSTRY

Special training session will be going to delivered by expert from ARK Infosolutions Pvt. Ltd.



ELIGIBILITY

Participation in this workshop is open to Post Doctoral Fellows, Research Scholars/ PG/ UG students and Faculty of recognized technical institutes, Researchers from the research laboratory, Industrial Person/Engineers and any other interested personnel. The successful participants will be given a participation certificate.

IMPORTANT DATES

The last date for the registration is **08/12/25**.

TARGET AUDIENCE

The selected applicants will be provided a secured meeting code of the web platform one day before the commencement of course.

ADDRESS FOR CORRESPONDENCE:

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COURSE FEE (in INR)

- Student: 800/-
 - Academic faculties: 1500/-
 - Industry professionals: 1500/-
- * INCLUSIVE OF GST**

REGISTRATION FORM

For registration use the following link:

<https://forms.gle/wuQuR2vRpPJDW4tP8>

MODE OF PAYMENT: (ONLINE ONLY)

Please transfer the Fee amount to the following bank account (details given below). Attach the payment receipt along with the google form for registration ([link mentioned above](#)).

Name: CONTINUING EDUCATION NIT ROURKELA

Acct. No.: 10138951784

Bank: State Bank of India

Branch: NIT Campus Rourkela

IFS Code: SBIN0002109



UPI ID: 01389517841@sbi

Merchant Name : Continuing Education NIT

Online certificates will be given to the participants who attend all sessions of the course.

FOR FURTHER ASSISTANCE

Student coordinators:

Prateek (+91-9337839747)

Vishwakarma (+91-8517015088)