

## NIT ROURKELA RANKINGS

2022	Ranked 15 in NIRF Engineering
2022	Ranked 39 in NIRF Overall
2022	Ranked 24 in NIRF Research
2022	Ranked between 271-280 in QS World University-ASIA Rankings
2022	Ranked between 801-1000 in THE World University

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

## ABOUT THE COURSE

The applications of CFD in engineering problems have changed a lot over the decades and have become truly multidisciplinary. The major focus of most of this work is to unravel complex flow physics involved in different multidisciplinary areas, such as biomedical, chemical industry, steel industry, stealth technology, etc. The focus of this program is to get a broader understanding of various cutting-edge research going on in the field of fluid dynamics and heat transfer.

### **Coordinators**

**Dr. Jnana Ranjan Senapati**  
**Dr. Sushil Kumar Rathore**  
**Department of Mechanical Engineering**  
National Institute of Technology, Rourkela  
Rourkela -769008, Odhisa

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+919474828662 (Prof. Rathore)

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[rathoresk@gmail.com](mailto:rathoresk@gmail.com)

## ABOUT NIT ROURKELA

National Institute of Technology Rourkela is an institute of national importance created under the act of parliament. NIT Rourkela provides quality education in a diverse and multi-cultural environment. The mission of the institute is to become an internationally acclaimed institution of higher learning that will serve as a source of knowledge and expertise for the society and be a preferred destination for both UG and PG studies. The vision of the institute is to advance and spread knowledge in the area of science and technology leading to creation of wealth and welfare of humanity.

The institute provides quality education in a diverse and multicultural environment. The mission of the institute is to become an internationally acclaimed institution of higher learning that will serve as a source of knowledge and expertise for the society and be a preferred destination for undergraduate and post graduate studies. The institute is offering undergraduate, post graduate and PhD programme in 21 branches of Engineering. The institute research centres are engaged in consultancy and research activities of several government bodies such as DST, DAE, CSIR, DRDO, BARC, ISRO and private industries.

## DEPARTMENT OF MECHANICAL ENGINEERING

The Mechanical Engineering of NIT Rourkela comprises three divisions namely design, manufacturing and thermal engineering. The department is known for research in variety of fields that include mechanical vibration, robotics, heat transfer, CAD/CAM, precision engineering, metal forming, manufacturing, CFD, industrial refrigeration and cryogenics. The academic programmes of the department reflect 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 the research on diverse fields. All the groups are working in close co-operation while retaining individual identities. Many Research and Development



## **A FIVE DAYS SHORT TERM COURSE on**

## **APPLICATIONS OF CFD TO ENGINEERING PROBLEMS WITH HANDS-ON PRACTICE**

**October 17 - 21, 2022  
(Hybrid Mode)**

### **Patron**

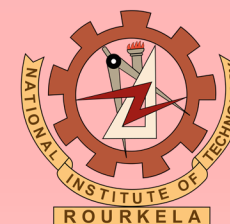
**Prof. K. Umamaheshwar Rao,**  
**Director, NIT Rourkela**

### **Chairman**

**Prof. S. K. Sahoo, HOD-ME**

### **Coordinators**

**Dr. Jnana R. Senapati, ME**  
**Dr. Sushil K. Rathore, ME**



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



**NIT RKL**



**NIT RKL**



## COURSE CONTENT

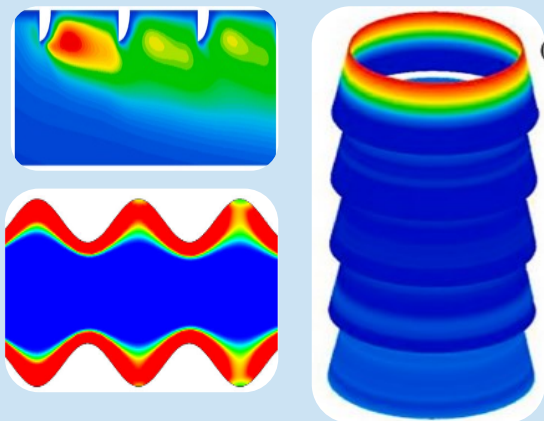
The course will cover the following major topics;

- Introduction to basics of computational fluid dynamics (CFD).
- Applications of CFD to various engineering problems.
- Computational multiphase flow.
- Computational heat transfer.
- Turbulence flow and heat transfer.
- Bio heat transfer .
- CFD in chemical industry.
- CFD applications of jet problems.

## TRAINING SESSION

The training session will cover the following topics;

- Basics of computational fluid dynamics.
- CFD simulations using commercial software. (Geometry, meshing, boundary conditions, solution)
- Applications of computational fluid flow and heat transfer for various engineering problems.



## 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 **10/10/22**.

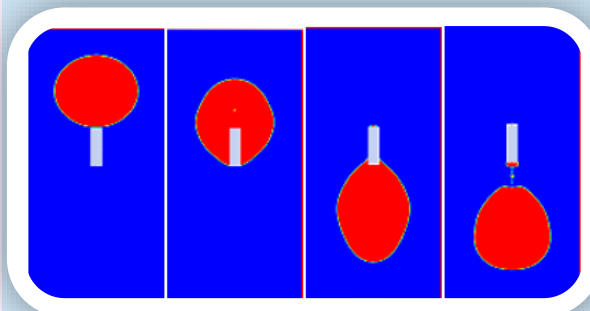
## TARGET AUDIENCE

Maximum number of applicants is limited to 50. The selected applicants will be provided a secured meeting code of the web platform one day before the commencement of course.

## ADDRESS FOR CORRESPONDENCE:

**Dr. Jnana Ranjan Senapati**  
Department of Mechanical Engineering  
National Institute of Technology, Rourkela  
Rourkela-769008, Odisha, India  
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**Dr. Sushil Kumar Rathore**  
Department of Mechanical Engineering  
National Institute of Technology, Rourkela  
Rourkela-769008, Odisha, India  
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**Email-id:** [rathoresk@nitrkl.ac.in](mailto:rathoresk@nitrkl.ac.in)



## COURSE FEE\*

### For Online

- Student: 600/-
- Academic faculties: 1000/-
- Industry professionals: 2000/-

### For Offline (Physical)

- Student: 1000/-
- Academic faculties: 1500/-
- Industry professionals: 3000/-

**\* INCLUSIVE OF GST**

## REGISTRATION FORM

For registration use the following link:  
<https://forms.gle/efPt7m1dGpuRJiMs7>

## 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

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

## FOR FURTHER ASSISTANCE

Kindly contact us through the email:-  
[senapatijr@nitrkl.ac.in](mailto:senapatijr@nitrkl.ac.in)

**For program related queries,**

Student coordinators

Yadaba (+91-8249863317)

Vishwa (+91-8249862861)



# A Five Days Short Term Course

on

Applications of CFD to engineering problems with hands-on practice

October 17<sup>th</sup> to 21<sup>st</sup>, 2022 (Hybrid)

Day	09:30 AM - 11:00 AM	11:15 PM - 12:45 PM	02:30 PM - 05:30 PM
<b>Day 1</b> <b>(17-10-2022)</b> <b>Monday</b>	<b>Session (I)</b> Prof. Sukanta Kumar Dash Professor, IIT Kharagpur	<b>Session (II)</b> Prof. Manoj Kumar Moharana Assistant Professor, NIT Rourkela	<b>Session (interaction)</b> Prof. Jnana Ranjan Senapati Prof. Sushil Kumar Rathore NIT Rourkela
<b>Day 2</b> <b>(18-10-2022)</b> <b>Tuesday</b>	<b>Session (III)</b> Prof. Pranab Kumar Mondal Associate Professor, IIT Guwahati	<b>Session (IV)</b> Prof. Sumit Kumar Assistant Professor, NIT Rourkela	<b>Session (interaction)</b> Prof. Jnana Ranjan Senapati Prof. Sushil Kumar Rathore NIT Rourkela
<b>Day 3</b> <b>(19-10-2022)</b> <b>Wednesday</b>	<b>Session (V)</b> Prof. Atul Sharma Professor, IIT Bombay	<b>Session (VI)</b> Prof. Akhilesh Kumar Sahu Assistant Professor, NIT Rourkela	<b>Session (interaction)</b> Prof. Sushil Kumar Rathore Prof. Jnana Ranjan Senapati NIT Rourkela
<b>Day 4</b> <b>(20-10-2022)</b> <b>Thursday</b>	<b>Session (VII)</b> Prof. Arup Kumar Das Associate Professor, IIT Roorkee	<b>Session (VIII)</b> Prof. Sushil Kumar Rathore Assistant Professor, NIT Rourkela	<b>Session (interaction)</b> Prof. Sushil Kumar Rathore Prof. Jnana Ranjan Senapati NIT Rourkela
<b>Day 5</b> <b>(21-10-2022)</b> <b>Friday</b>	<b>Session (IX)</b> Prof. R. P. Chhabra Professor, IIT Kanpur	<b>Session (X)</b> Prof. Jnana Ranjan Senapati Assistant Professor, NIT Rourkela	<b>Test, feedback, vote of thanks, and the formal closure of the program</b>

\* Sessions are subject to change according to the availability of professors.



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October 17<sup>th</sup> to 21<sup>st</sup>, 2022 (Hybrid)

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<b>Day 1</b> (17-10-2022) Monday	Inauguration	Session-1	Break	Session-2	Lunch	Instructions for problem solution	Hands-on practice
<b>Day 2</b> (18-10-2022) Tuesday	-----	Session-3	Break	Session-4	Lunch	Instructions for problem solution	Hands-on practice
<b>Day 3</b> (19-10-2022) Wednesday	-----	Session-5	Break	Session-6	Lunch	Instructions for problem solution	Hands-on practice
<b>Day 4</b> (20-10-2022) Thursday	-----	Session-7	Break	Session-8	Lunch	Instructions for problem solution	Hands-on practice
<b>Day 5</b> (21-10-2022) Friday	-----	Session-9	Break	Session-10	Lunch	Test, Feedback, and Valedictory	

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