



INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of Education Initiative)



MoE's
INNOVATION CELL
(GOVERNMENT OF INDIA)

75
Azadi Ka
Amrit Mahotsav

विकसित भारत
अभियान
1947 TO 2047



Institute Innovation Council

**Pt. Ravishankar Shukla University, Raipur
Chhattisgarh – 492010**

Aishe Code: U-0093

(Under The Initiative of Ministry of Education's Innovation Cell)

IIC ID: IC201810375

Report

**Institute Innovation Council, Pt.
Ravishankar Shukla University, Raipur**

Conducted

On

**“Mathematics of Climate Change:
Predicting the Future”**

On

23rd August 2025

In association with

Innovation & incubation Centre

Centre for Basic Science,

Pt. Ravishankar Shukla University, Raipur



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Poster



Mathematics of Climate Change:
Predicting the Future

By

Dr. Govind Sahu

IIC Member & innovation Ambassador
Centre for Basic Science, pt. Ravishankar



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Details of the Event

Name of Program Type	Awareness program (Self driven activity IIC 7.0)
Name of Program Theme	Using mathematical models and data to understand, predict, and mitigate climate change impacts.
Objective	Use math models to predict climate trends, assess impacts, and guide future environmental action.
Benefit	Empowers informed decisions by modeling climate trends, risks, and solutions using mathematics.
Duration of Activity	2 hour
Mode of Event	Offline
No. of Students Participants	40
No. of Faculty Participants	3
No. of External Participants	00



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Attendance

Lecture on "Mathematics of Climate Change."

Date: 23/08/2025, Place: Lecture Hall-7, Center for Basic Sciences, Pt. Ravishankar Shukla University, Raipur

Name	Class	Signature
1) Shikhi Palka	5 th Sem (C)	
2) Pooja Joshi	5 th Sem (C)	
3) Nishita	5 th Sem (B)	
4) Harshita	5 th Sem (P)	
5) Khushi Lachhuvani	5 th Sem (P)	
6) Rupali Jambhale	5 th Sem (P)	
7) Sanskriti Rajput	5 th Sem (P)	
8) Hemendra Singh	5 th Sem (C)	
9) Yash Kuman Sahu	1 st Sem	
10) Jay	1 st Sem	
11) Deepak Jakhadhari	1 st Sem	
12) Khushi Anaya	1 st Sem	
13) Yogitama Jyoti	1 st Sem	
14) Madhuri Rawte	1 st Sem	
15) Lalman	1 st Sem	
16) Jyoti Ka Kumbhkar	1 st Sem	
17) Meenal Maheshwari	1 st Sem	
18) Divyansh Verma	1 st Sem	
19) Hemanshu Rawte	1 st Sem	
20) Rachit Chauhan	1 st Sem	
21) Aashu Sahu	1 st Sem	
22) Aamit Raj Phutane	1 st Sem	
23) Kamalakar Pista	1 st Sem	
24) Prakharsao	3 rd Sem	

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25) Lavanya Kumar Chandrawanshi	Sem I.	
26) Karthik Prakash Singh	2 nd Sem	
27) Preeti Thakur	1 st Sem	
28) Neha Singh	1 st Sem	
29) Khemchand	1 st Sem	
30) Neelam Bortika	1 st Sem	
31) Neelakshi	1 st Sem	
32) Hiten Kosma	1 st Sem	
33) Piyush Bhoi	1 st Sem	
34) Omshankar Koliyare	1 st Sem	
35) Jayanto Sarkar	1 st Sem	
36) Rishi Verma	2 nd Sem	
37) Anushka Nalwa	1 st Sem	
38) Nishi Salunke	-1-	
39) Chhaya Chandrakar	-1-	

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Program Summary

The lecture “*Mathematics of Climate Change: Predicting the Future*” was delivered by Dr. Govind Prasad Sahu (Center for Basic Sciences, Pt. Ravishankar Shukla University, Raipur) for the students of the Integrated M.Sc. program at CBS at 1.30 PM on 23rd August, 2025. The session was organized under the self-driven activities of the Institute Innovation Council; Pt. Ravishankar Shukla University aims to expose young scholars to the applications of mathematics in climate science.

Climate science is inherently complex, but mathematics provides the essential framework for modelling, prediction, and informed decision-making. It highlighted how mathematical modelling, data analysis, and nonlinear systems offer powerful tools for predicting climate dynamics, assessing risks, and informing policy. The session highlighted how mathematical methods connect theory with practical climate challenges. The lecture concluded by motivating students to consider their own role in contributing to climate research and sustainable futures.

The lecture highlighted four interconnected themes showing how mathematics underpins climate science: climate models, where differential equations, numerical simulations, and nonlinear systems capture energy balances and chaotic dynamics; observations and data, where statistical tools, time series analysis, and probabilistic methods reveal trends and uncertainties in temperature–CO₂ relationships and climate cycles; climate impacts, where population dynamics, epidemiological models, and optimization frameworks assess risks to biodiversity, health, and energy systems; and policy and case studies, where scenario analysis, carbon budgets, and India-specific challenges such as monsoon variability and food security demonstrate how mathematical insights guide real-world decision-making.

Students gained an understanding that mathematics is not abstract in this context—it is a powerful tool for predicting our climate future and guiding policy. They were encouraged to reflect on their role in contributing to climate science through mathematical and interdisciplinary approaches.



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Photos of the Event





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Conclusion

The mathematics of climate change plays a vital role in understanding and predicting Earth's future. Through advanced models, data analysis, and simulations, we can anticipate temperature changes, sea level rise, and extreme weather patterns. These mathematical tools enable scientists and policymakers to make informed decisions to mitigate the effects of climate change. As models become more accurate and data becomes more accessible, our ability to respond proactively improves. Ultimately, mathematics not only helps us grasp the scale and urgency of the crisis but also provides a foundation for creating effective, science-based solutions for a sustainable and resilient future.

Dr. Kavita Thakur
President, IIC PRSU