

# WORKSHOP HIGHLIGHTS

## ABOUT THE FDP

Mathematics forms the foundational language of modern science, engineering, economics, data analytics, and artificial intelligence. With the increasing integration of AI, machine learning, and computational modelling into research and industry, there is a growing need for academicians and researchers to revisit and strengthen their understanding of core mathematical principles and their contemporary applications using technology.

This Faculty Development Programme is academically significant as it bridges classical mathematical theories with modern computational, analytical, and AI-driven problem-solving approaches. The programme emphasizes real-world modelling, numerical methods, probability, optimization, game theory, and AI applications, aligning with current research priorities, interdisciplinary teaching needs, and outcome-based education frameworks.

The programme brings together eminent mathematicians, academicians, and practitioners from premier national and international institutions to offer theoretical insights, practical perspectives, and future research directions.

## OUTCOME

At the end of the FDP, participants will be able to:

- Apply advanced mathematical concepts to real-world and interdisciplinary problem-solving contexts
- Understand the role of mathematical analysis, linear algebra, and numerical methods in modelling dynamic systems
- Integrate probability, statistics, and risk analysis into data science and engineering applications
- Gain insights into AI and machine learning tools from a mathematical perspective
- Strengthen research capabilities in modelling, simulation, analytics, and computational methods
- Enhance curriculum design and research supervision with contemporary mathematical applications

## ABOUT AIU-AADC

The Association of Indian Universities (AIU) is a premier representative body of the universities and HEIs of India. AADC initiative is a forward-looking program introduced by AIU to strengthen the academic and administrative ecosystem of HEIs.

The centre aims to enhance the professional capacities of faculty and administrative staff in universities and other Higher Educational Institutions. The centre focuses on :

- Training faculty for online/offline/blended teaching learning methodologies.
- Developing e-content and leveraging technology for continuous assessment and evaluation
- Facilitating research collaboration
- Conducting programs on effective university governance and administration through technological advancements

## ADVISORY COMMITTEE

Sl No.	Name	Department	Designation
1.	Prof. Alak Kumar Buragohain	Vice Chancellor	Convenor
2.	Joint Secretary	AIU	Member
3.	Prof. Amar Jyoti Choudhary	Director, Dr. BHCC, RGU	Member
4.	Dr. Diganta Munshi	Registrar – Administration	Member
5.	Dr. D. N. Singh	Registrar – Academics	Member
6.	Prof. George A.P.	Dean RSB & RSC	Coordinator & Secretary
7.	Prof. Hiren Kumar Deva Sarma	Professor, Department of IT, Gauhati University	External Member
8.	Dr. Rashmi Dutta Baruah	Associate Professor, Department of CSE, IIT Guwahati	External Member
9.	Dr. Aruna Dev Roy	Associate Professor & HOD, RSC	Member
10.	Dr. Deepjyoti Choudhury	Associate Professor & HOD, Dept of CSE, RSET	Member
11.	Ms. Dipika Tulshyan Agarwal	Dy Registrar, HR & Regulatory Compliance	Member
12.	Mr. Shamim Goney	Dy Registrar, RGU	Member
13.	Mr. Sasanka Boruah	Sr. Manager (IT), RGU	Member

In association with RGU – IQAC

## FIVE-DAY ONLINE WORKSHOP ON MATHEMATICAL PRINCIPLES FOR MODERN PROBLEM-SOLVING: APPLICATIONS, MODELLING, ANALYTICS & AI TOOLS

16<sup>th</sup> February to 20<sup>th</sup> February 2026



## OBJECTIVES OF WORKSHOP

- To reinforce core mathematical principles relevant to modern scientific and technological challenges
- To explore mathematical modelling techniques for real-world dynamic systems
- To introduce applications of linear algebra, numerical analysis, and probability in computation and AI
- To examine the role of mathematics in artificial intelligence, machine learning, and data science
- To expose participants to applied game theory, network games, and economic modelling
- To promote interdisciplinary research and application-oriented mathematical thinking

## WHO SHOULD ATTEND

- Faculty members teaching Mathematics, Statistics, Engineering, Computer Science, Economics, and related disciplines
- Researchers and scientists engaged in modelling, analytics, and computational research
- Doctoral and post-doctoral scholars
- Professionals involved in data science, AI, quantitative analysis, and systems modelling

## CERTIFICATION

- Participants who attend all sessions will be awarded a Certificate of Participation.

## REGISTRATION PROCESS

1. Pay the registration fee using the QR Code
2. Take a screenshot of the payment
3. Fill the registration form using the provided link
4. Upload the payment screenshot in the form
5. Submit the form
6. Join the WhatsApp group (link visible after successful submission)



**Registration fee:**  
**Rs. 500 (including GST)**

**Registration Link:**

<https://forms.gle/NBFZdKn35dQTEhQk9>

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**Dr. Ranjana Parihar (Chief Coordinator)**

**Joint Secretary, AIU** Email: [aadc@aiu.ac.in](mailto:aadc@aiu.ac.in), 011-23213480

**Dr. Bimalendu Kalita, Associate Professor**

Dept of Mathematics, Royal Global University

## ABOUT RGU

The Assam Royal Global University, since its inception in 2017, has been a trendsetter in the higher education landscape in the North-East. The University in its endeavour to build a legacy of character and reputation in the state of Assam and in Northeastern region is committed to offer quality education at affordable price. The university has been striving towards achieving the goals of academic and professional excellence in conformity with the vision and the goals of the National Education Policy (NEP) 2020 and Sustainable Development Goals (SDGs) envisioned by the United Nations. The University constantly endeavours to motivate, inspire and guide the young minds to serve the society, the nation and the whole world as conscious, conscientious and committed citizens with highest level of professionalism, basic human values and virtues for a sustainable world. Our faculty comprises accomplished professionals who bring global perspectives and expertise gained from esteemed institutions and organizations across the globe.

The university is on a fast growth trajectory with 23 schools, 9 centres, 8500 plus students, 500 plus faculty members and more than 130 programmes offering UG, PG and PhD level besides having state-of-the-art infrastructure facilities for nurturing innovation, research, sports, cultural diversity, environmental sustainability, etc.

**Date: 16<sup>th</sup> Feb, 2026– 20<sup>th</sup> Feb, 2026**

**Time: 11am– 1 pm and 2 pm – 4 pm**

**Mode: Online**

## WORKSHOP SCHEDULE

### Day 1 – Monday, 16 February 2026

10.30 AM – 11.00 AM **Inaugural Session**

**Session 1:** 11.00 AM – 1.00 PM

**Mathematical Analysis as a Framework for Real-World Problem Solving**

Prof. (Dr.) Nayandeep Deka Baruah, Tezpur University

**Session 2:** 2.00 PM – 4.00 PM

**Linear Algebra for Applied Analysis & Computation**

Prof. (Dr.) Munmun Hazarika, Tezpur University

### Day 2 – Tuesday, 17 February 2026

**Session 3:** 11.00 AM – 1.00 PM

**Numerical Analysis as a Tool for Modelling Real-World Dynamic Systems**

Prof. (Dr.) Bhupen Deka, Indian Institute of Technology (IIT) Guwahati

**Session 4:** 2.00 PM – 4.00 PM

**AI Applications in Science and Technology**

Dr. Tarini Kumar Dutta, Retd. Prof. & HOD, Dept. of Math, Gauhati University

### Day 3 – Wednesday, 18 February 2026

**Session 5:** 11.00 AM – 1.00 PM

**Artificial Intelligence as a Research Partner: Emerging Tools, Trends, and Transformative Impact**

Prof. (Dr.) Manoj Kumar Deka, Assam Skill University, Guwahati

**Session 6:** 2.00 PM – 4.00 PM

**Application of Machine Learning in Quantitative Techniques**

Prof. (Dr.) Sanasam Ranbir Singh, Department of Computer Science & Engineering, IIT Guwahati

### Day 4 – Thursday, 19 February 2026

**Session 7:** 11.00 AM – 1.00 PM

**Applications of Probability in Machine Learning and Data Science**

Prof. (Dr.) Kishore Kumar Das, Gauhati University

**Session 8:** 2.00 PM – 4.00 PM

**Applied Probability and Risk Analysis in Engineering Systems and Reliability**

Prof. (Dr.) Dilip Chandra Nath, Royal Global University (RGU)

### Day 5 – Friday, 20 February 2026

**Session 9:** 11.00 AM – 1.00 PM

**Applications of Cooperative Game Theory and Network Games in Economic Systems**

Prof. (Dr.) Surajit Borkotokey, Dibrugarh University

**Session 10:** 2.00 PM – 4.00 PM

**Dynamic System Modelling Using Calculus**

Prof. (Dr.) Bhupen Deka, Indian Institute of Technology (IIT) Guwahati

4:00 pm – 4:30 pm **Valedictory Session**