#### AMITY INSTITUTE OF AEROSPACE ENGINEERING

#### **Guest Lecture Report**

A lecture session was organized on 15<sup>th</sup> October 2020 on the occasion of "Innovation Day" to mark the Birth Anniversary of Dr. A. P. J. Abdul Kalam. The details of the session are given below:-

Topic: "ENERGY CONCEPT IN AIRPLANE PERFORMANCE"

Date: 15th October 2020

**Place:** Online Mode (M.S Team)

Time: 02:30pm – 03:30pm. Speaker: Dr. Rakesh Kumar.

**About the Speaker:** Dr. Rakesh Kumar is the M. Tech and Ph. D in Aerospace Engineering from IIT Kanpur. He is currently serving as a professor at Department of Aerospace Engineering, Punjab Engineering College, Chandigarh. His area of interest includes Flight Mechanics, Aerodynamics, Artificial Neural Networks.

**Major points covered during the talk:** He has covered wide area of Aerodynamics. Broad areas of his discussions are: -

- Energy Concepts in Airplane Performance.
- Aerodynamics Ratio for various flights.
- Energy Climb and Steady Climb.
- Steady Level Flight.
- Gliding (Unpowered) Flight.
- Thrust Required or Drag Curve.
- Thrust and Power Curve.
- Minimum Drag Condition.
- Lift to Drag Ratio.
- Minimum Power Condition.
- Accelerated Rate of Climb.
- Specific Excess Power Contours (for Subsonic Aircraft).
- Variation of Drag Coefficients.
- Rate of Climb and Time to Climb.
- Climb Range for Jet Aircraft and Gliding flights etc.

### Students of following batch attended the lecture: Total 46 Students.

- 1. B. Tech
  - 2017-21 Batch
  - 2018-22 Batch
  - 2019-23 Batch
  - 2020-24 Batch
- 2. B. Tech+M.Tech
  - 2017-22 Batch
  - 2020-25 Batch
- 3. M.Tech
  - 2020-22 Batch

#### Following faculty member also attended the lecture:

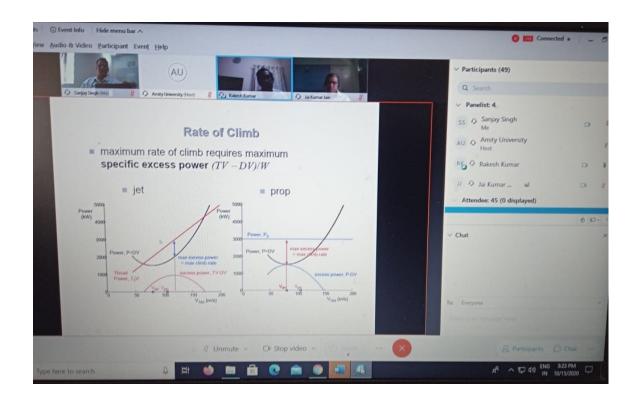
- 1. Dr. Sanjay Singh (Director)
- 2. Dr. Basant Agarwal
- 3. Dr. Sharbari Banerjee
- 4. Mr. Jayanta Sinha
- 5. Mr. Saquib Reza
- 6. Prof. J. K. Jain
- 7. Ms. Soni Gupta

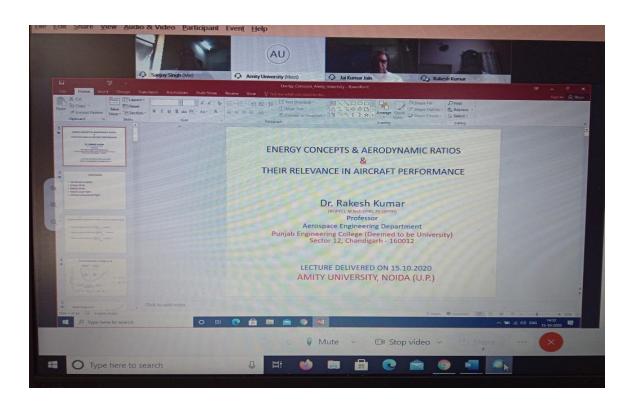
# **Event Objectives**:

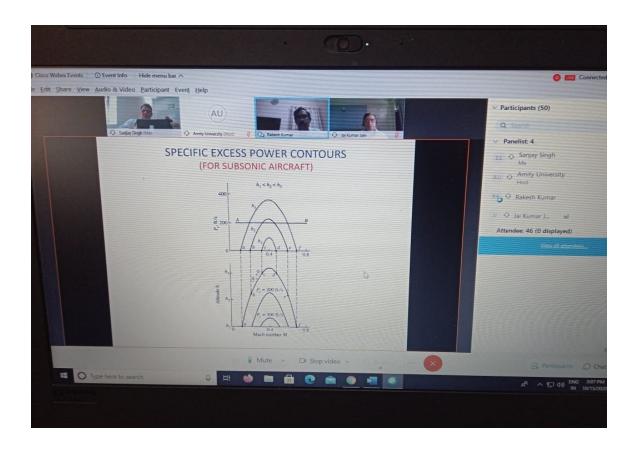
- To disseminate the knowledge of the Energy Concept in Airplane Performance.
- To introduce the students with the challenges in the field of Aircraft Design and Performance.

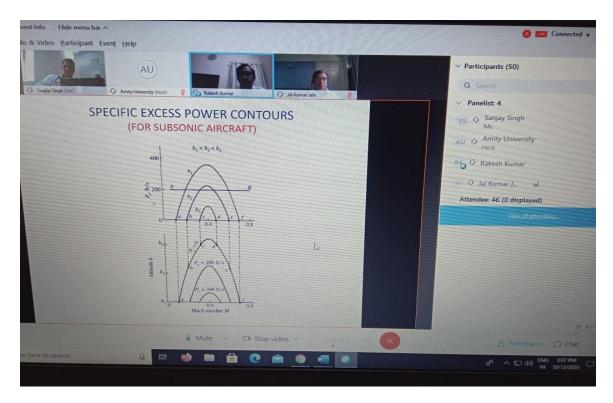
## **Expected Outcomes**:

- Students of B. Tech 3<sup>rd</sup>, 4<sup>th</sup> year and M. Tech would get new topic for their research and major projects related to Aerodynamics.
- A knowledge pool will be created in the field of Aircraft Energy and Airplane Performance.
- Publications in the field of Airplane performance can be anticipated.
- Students will be able to understand full concepts of Thrust, Energy climb and steady climb, Rate of Climb and Time to Climb etc.
- Students will be able to understand full concepts of Gliding (Unpowered) Flight.









Some pics of Guest Lecture