# EXCEL ENGINEERING COLLEGE
## (Autonomous)
## KOMARAPALAYM-637303

## DEPARTMENT OF AERONAUTICAL ENGINEERING
## ARHAKRZ NEWSLETTER
## 2K23– 24 Q3

VOLUME I ISSUE 3

### VISION

To empower the student s subject knowledge of Aeronautical Engineering for serving the society in a challenging global environment

### MISSON

To provide the quality technical education in tune with challenges.

To offer latest technological development in the field of aero engineering.

To integrate the intellectual, spiritual, ethical and social development of the students for becoming dynamic Aeronautical engineers.

To initiate desires for under taking entrepreneurship and lifelong learning.

### CHAIRMAN'S MESSAGE

Aeronautical Engineering is one of the prime branches of engineering that deals with the study and development of new technology in the field of Aviation, Space exploration and in defense . This branch include the study of testing , Designing , Construction, maintenance of commercial aircraft, spacecraft and missiles well as their components.

**Prof. Dr. A. K. NATESAN**
**M. Com., MBA., M. Phil.,**

### VICE-CHAIRMAN'S MESSAGE

Department of Aeronautical Engineering has always brought pride to our institution. I congratulate the aero department releasing the ARHAKRZ newsletter for this month and I encourage the student s to work towards excellence, to gain more knowledge and to learn about the latest developments in the field of aeronautics

**Dr. N. MATHAN KARTHIK**
**M.B.B.S., M. H. Sc .,**

### PRINCIPAL'S MESSAGE

My heartiest congratulation to the department of aeronautical engineering , for publishing the department newsletter portraying the academic activities of the department . In the area of outcome based education, empowering the students is the trust area to be addressed in the professional institution. I earnestly wish that this new publication turns out to be a

**Dr. K. BOMMANNA RAJA**
**Ph.D.,**

### HOD'S MESSAGES

Aeronautical engineering is a fascinating and high technology discipline more then 100 years old, requiring much more contribution from engineers and scientist to broaden its scope and application to develop next generation hypersonic aircraft, reusable space craft, launch vehicles etc., my best wishes and greetings to all the students who are aspiring to become aeronautical engineers and take India to the for front of developed nations.

**DR. K. Rajkumar Ph.D.,**

### INDEX OF THE NEWSLETTER

# DEPARTMENT NEWS

Non –Academic Events on **Inter department Sports Meet** on 31.01.2024 at **indoor stadium , EEC**

**Chief Guest**:

Dr. K. Rajkumar Professor/Aeronautical,

Excel Engineering College,
Komarapalayam .

**No. of participants:** 86


Academic Guest Lecture on Propulsion Technologies in Navigating the Future of Space Exploration on 23.02.2024 at APJ Hall

**Chief Guest**:

Dr.P.Saravanan Associate Professor,

Hindustan University, Chennai .

**No. of participants:**
**65**

Academic Guest Lecture on

**"Intellectual Property Challenges and Strategies"** at Pavayammal Hall on 08.03.2024

**Chief Guest**:

Dr.V.Nagaraj,

Managing Director & Founder,

Trueline Research Pvt, Salem

**No. of participants:** 98


Lecture on **"Commercialization of Research consulting Innovation "** at Smart Hall on 03.02.2024

**Chief Guest**:

Mr.M.Karthikeyan,

UAV Design Engineer,

Dhaksha Unmanned systems Pvt, Chennai

**No. of participants:** 92

# DEPARTMENT ACTIVITY NEWS

Academic Guest Lecture on **'CFD Application in Aerospace sector'** on 06.03.2024 at Pavayammal Hall

**Chief Guest:**

Dr.M.Senthilkumar,

Assistant Professor & HoD,

Kumaraguru, Coimbatore.

**No. of Participants: 62**

Gender equity Program **"**Breaking Barriers, Building Bridges: A Journey Towards Gender Equity in society**"** on 31.01.2024 at Smart Hall.

**Chief Guest**

M.Sanjay

Assistant Professor– Aero

Excel Engineering college

**No. of Participants:** 86

## Students Activity participation*

| Sl.No | Nature of Events | Participants |
|---|---|---|
| 1 | Workshop | 02 |
| 2 | Seminar | 04 |
| 3 | Symposium | 05 |
| 4 | Other | 01 |
| | Total | 12 |

# Placement Details*

| Sl. No | Name of the Company | Number of Students |
|---|---|---|
| 1 | Nokia Solutions, Chennai. | 2 |
| 2 | A&B Hr Associates Pvt Ltd, Chennai. | 3 |

# Faculty Participation

## Research Paper publication — Jan to March 2024*

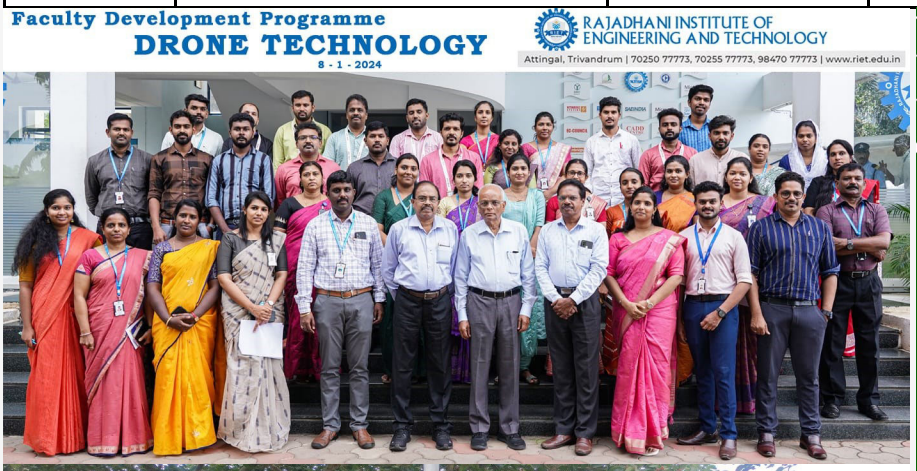
| Name of the Faculty | Title of the Paper | Conference |
|---|---|---|
| Mr. N Sreenivasa Raja | Optimizing Noise Reduction in Dual Stream Turbofan Nozzles : CFD and IoT Analysis of Offset Stream Technology | 2023 3rd International Conference on Pervasive Computing and Social Networking (ICPCSN) Pages 1407 |
| Mr. M Nambi Rajan | Design and Testing of a Hexacopter Sprayer for Controlled Deforestation and Pest Control | 2023 4th International Conference on Smart Electronics and Communication (ICOSEC) Pages 50-56. Publisher IEEE |


## Research Patent publication

S. Prabhu. AI Driven OMNI Channel Data Communication system Employing Machine Learning and Predictive Analysis, (202421003752)

## Event Participation*

| SL. No. | Name of the faculty | Designation | FDP / Seminar / Conference / Workshop / Webinar / NPTEL / Online course Industrial / Training |
|---|---|---|---|
| 1 | Mr. S. R. Arun | AP | 1 |
| 2 | Mr. M. Sanjay | AP | 1 |
| 3 | Mr. R. Gowrishankar | AP | 1 |
| 4 | Mr. S. Sundaram | AP | 1 |
| 5 | Mr. S. Arunpandiyan | AP | 1 |








# Reading page

## Sustainability and Propulsion Innovations

- **Sustainable Aviation Fuel (SAF):** The industry is accelerating efforts to adopt SAF, aiming for a 5% reduction in aviation fuel carbon intensity by 2030. The U.S. plans to produce 3 billion gallons of SAF by that year, up from 15.8 million gallons in 2022.
- **Advanced Propulsion Systems:** GE Aerospace, in collaboration with Safran, is developing an open-fan engine architecture targeting over 20% fuel efficiency improvement. Additionally, GE demonstrated a turbine-based combined cycle system integrating a rotating detonation engine (RDE) with a ramjet/scramjet, aiming for hypersonic speeds.
- **Electric and Hybrid-Electric Propulsion:** Efforts are underway to develop electric and hybrid-electric propul-

## Digital Transformation and AI Integration

- **AI and Machine Learning:** Aerospace companies are leveraging AI for predictive maintenance, autonomous systems, and advanced manufacturing techniques, enhancing safety and reducing operational costs.
- **Digital Twins:** The adoption of digital twin technology allows for real-time simulation and analysis of aerospace components, improving design, testing, and maintenance processes.

## Workforce Dynamics and Talent Acquisition

- **Skilled Labor Shortage:** The aerospace industry faces challenges in recruiting skilled workers, with a projected need for 34,500 new mechanics annually. Companies are focusing on training programs and increasing STEM education to address this gap.
- **Competition for Talent:** Traditional aerospace firms like Boeing are experiencing a "brain drain" as engineers are drawn to innovative space companies such as SpaceX and Blue Origin.

## India's Emerging Role in Aerospace

- **Supply Chain Hub:** Global aerospace companies, including Airbus and Rolls-Royce, are increasingly sourcing components from India to mitigate Western supply chain challenges. Indian firms are transitioning from basic manufacturing to high-value activities like design and engineering, aiming to capture 10% of the global aerospace supply chain market within a decade.

# READING PAGE

## PROGRAM EDUCATIONAL OBJECTIVES

***PEO 1:*** *Graduates will have the ability to* ***handle industrial challenges*** *through advanced engineering technologies.*

***PEO 2:*** *Graduates will have the capability to* ***become socially, intellectually, and ethically responsible aeronautical engineers.***

***PEO 3: Graduates expertise with essential technical, managerial, and soft skills that make them to be professionally competent.***

## PROGRAM SPECIFIC OUTCOMES

The graduates will able to

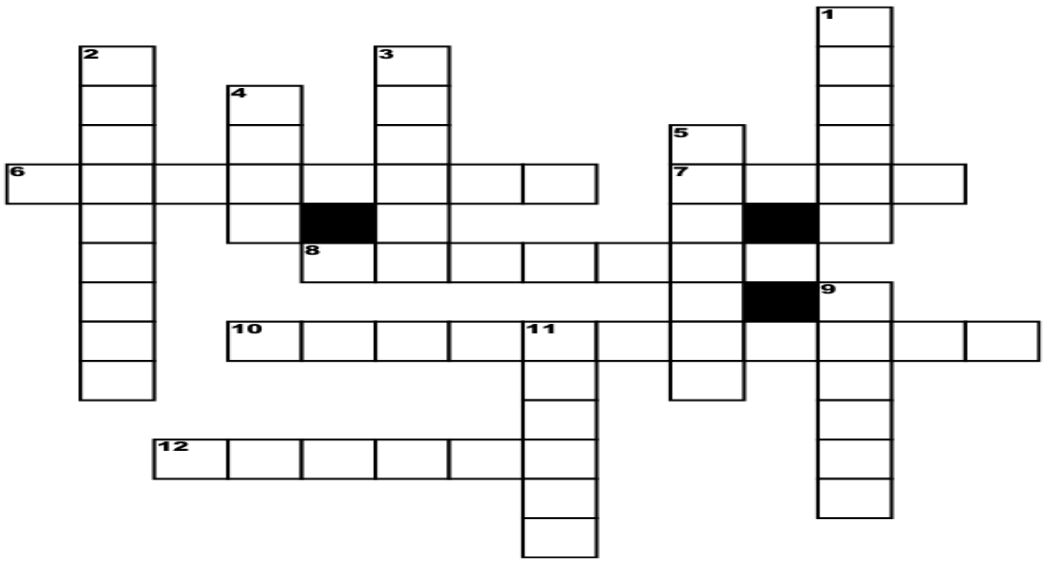
**PSO 1:** Exhibit skill and knowledge on aerodynamics, propulsion and structures.

**PSO 2:** Solve real time problems related to aircraft manufacturing and maintenance.

**PSO 3:** Apply CAD/CAE tools to design and analyze the aircraft components.

# Aero Puzzle

## aviation trivia



**Across**

**6. Piper's Indian**

**7. _____ Lycoming (Modern)**

**8. Wilbur's Bro**

**10. AVG Squadron**

**12. Dooittle raiders' ship**

**Down**

**1. Relative Wind's angle (of)**

**2. P-38**

**3. Aircraft Designer Anthony _____ (WW1)**

**4. JAAF mainstay**

**5. "the First and the Last" author, A. _____**

**9. Made in Wichita (mostly)**

**11. Instrument Landing _____**

# Editorial Board

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