







EXCEL ENGINEERING COLLEGE (Autonomous) KOMARAPALAYM-637303

DEPARTMENT OF AERONAUTICAL ENGINEERING ARHAKRZ NEWSLETTER 2K23- 24 Q4

VOLUME I ISSUE 4	CHAIRMAN'S MESSAGE	VICE-CHAIRMAN'S MESSAGE	PRINCIPAL'S MESSAGE
VISION <p>To empower the student s subject knowledge of Aeronautical Engineering for serving the society in a challenging global environment</p>			
MISSION <p>To provide the quality technical education in tune with challenges.</p> <p>To offer latest technological development in the field of aero engineering.</p> <p>To integrate the intellectual, spiritual, ethical and social development of the students for becoming dynamic Aeronautical engineers.</p> <p>To initiate desires for under taking entrepreneurship and lifelong learning.</p>	<p>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.</p>	<p>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</p>	<p>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</p>
	Prof. Dr. A. K. NATESAN M. Com., MBA., M. Phil.,	Dr. N. MATHAN KARTHIK M.B.B.S., M. H. Sc .,	Dr. K. BOMMANNA RAJA Ph.D.,

HOD'S MESSAGES

INDEX OF THE NEWSLETTER

<p>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.</p>	DESCRIPTION	PAGE NO
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DR.A..KARTHIKEYAN Ph.D.,		08
		

DEPARTMENT NEWS

One day National level Hands on training “UAV” on 23.04.2024 at **Hyndai Conference Hall , EEC**

Chief Guest:

Ms.RS.Krithiga, Ceo ,
Jet Aerospace,
Palakkad .

No. of participants: 48



The value added course conducted in **product development** in Smart Room duration of 30hrs.

Chief Guest:

J.Senthil kumar & S.Prabhu ,
Assistant professor, Excel Engineering college

No. of participants: 67



Students Activity participation*

The students are participated in the event has conducted by various institution in the month of April to june 2024

Sl.No	Nature of Events	Participants
1	Workshop	05
2	Seminar	07
3	Symposium	03
4	Other	22
	Total	37

Placement Activities*

Sl.No	Name of the Company	Number of Student Placed
1	Gainup Industries India Pvt Ltd, Dindigul.	4
2	Pianalytix Edutech Pvt Ltd, Telengana.	2
3	TVS, Hosur.	1
4	CRI Pump, Chennai.	2
5	Aditya Construction Company, Bihar.	2
6	Arian Technocraft Pvt Ltd, Bangalore.	1
7	Ashok Leyland, Chennai.	1

Students Award



Excel[®]
ENGINEERING COLLEGE - AUTONOMOUS
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA (AERO, CSE, ECE & MECH) NAAC with 'A' and Recognised by UGC (2f & 12B)
Komarapalayam, Namakkal Dt. - 637303

INDIAN SOCIETY FOR TECHNICAL EDUCATION

HEARTY Congratulations!



SAHAJ SABHARWAL
IV Year-Aero



GEETHA M
IV Year-Civil

The Management, Directors, Principal, Head of the Departments, Faculty Members and Students of Excel Engineering College congratulate the students for securing
ISTE BEST STUDENT AWARD-2023.

ISTE Tamilnadu section Engineering Student's convention held at P.S.R Engineering college, Sivakasi on 06.04.2024

excelinstitutes.com "Achieve Your Life Goals @ Excel"



Faculty Participation

Research Paper publication

April to June 2024*

Sl.No	Faculty Member	Title of the Research paper	Conference
1	Mr. G Velmurugan	Experimental analysis of sugarcane and coconut shell fibre impregnated with glassfiber composite for aircraft application	Materials Today: Proceedings,26/04/2024
2	Mr. S.Karthik	Investigation of EDM process parameter in aluminium alloy (AA2024) reinforced with 10%SiC & 5%Boron carbide MMC	Proceedings of the Second International Conference on Advanced Trends in Renewable Energy (ICATRE 23)
3	Mr. S. Karthik	Investigation of a Magnesium metal matrix composite reinforced with 2.5% Al ₂ O ₃ , 2.5 %B ₄ C and 2.5% Sic to improve mechanical Properties	ICAMCP – 2024, 25 – 26 April 2024

Patents Filed / Published

1. J Senthill Kumar. Design and Fabrication of Plastic Bottle Recycling Machine (202341054753)
2. S. Prabhu. AI Driven OMNI Channel Data Communication system Employing Machine Learning and Predictive Analysis, (202421003752)

Student Project Funding

1.	Mr. K. Vijaybabu	Niral Project	10000	3 Months
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Student Product Development

S.No	Students Name	Guide	Name of the product developed
1	Most Umme Ayesha M. Malini Mugilesh P Bhuvan A	Dr. K. Rajkumar	Wooden stove for higher burning performance using stick and blower

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. Arunpandiyar	AP	1
6	Dr.Gowtham	AP	1

Visiting/Adjunct/Emeritus Faculty

<i>Resource person Name</i>	<i>Designation & Name of the Company</i>	<i>Course Code & Title</i>	<i>Number of Hours Handled</i>
Mr.M.Karthikeyan	Senior Design Engineer, Dhaksha Unmanned Systems Pvt.Ltd	20AE703 Aircraft Design	8
Mr.M.Karthikeyan	Senior Design Engineer, Dhaksha Unmanned Systems Pvt.Ltd	20AEE05 Industrial Aerodynamics	8
Mr. Daniel	Aero Knots, Chennai.	20AE604 UAV Systems	12
Mr.J.Balakannan	CEO, Jet Aerospace, Palakad, Kerala. India	20AE501 Flight Dynamics	8
Dr.V.Nagaraj	Managing Director, True line Research Pvt.Ltd	20AE503 Compressible Flow Aerodynamics	7
Dr.V.Nagaraj	Managing Director, True line Research Pvt.Ltd	20AE605 Analysis and Simulation	10

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.

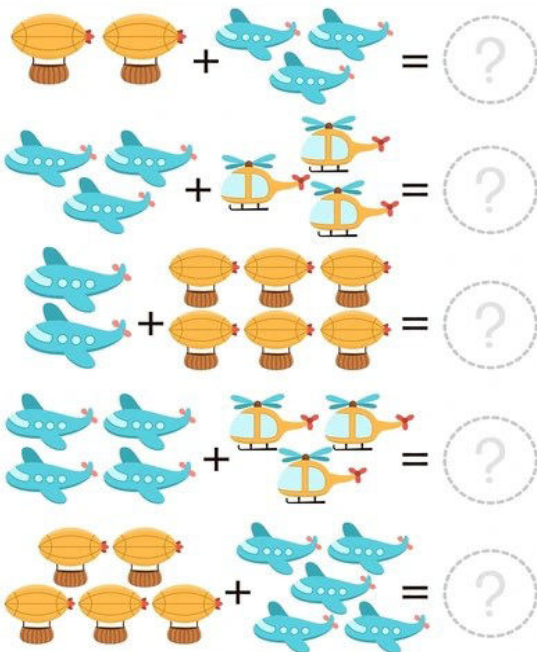
PSO 2: Solve real time problems related to aircraft manufacturing and maintenance.

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

Aero Puzzle



HOW MANY AIRCRAFTS?



Find out the Aircraft ????

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.

Editorial Board

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HEAD OF THE DEPARTMENT

Mr. M. SANJAY
ASSISTANT PROFESSOR



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S. Karthik - AP/Aero
Dr.M.Gowtham—AP/Aero

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Kaushal Raj Bhattacharai- III year Aero



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Evangeline Christina -III year Aero
Ashika K V -IV year Aero

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