# ACS COLLEGE OF ENGINEERING

Affiliated to VTU, Belagavi, Approved by AICTE New Delhi and Govt. of Karnataka

(A Unit of RajaRajeswari Group of Institutions)

Mysore Road, Bengaluru, Karnataka.

NAAC 'A' Accredited

# DEPARTMENT OF AERONAUTICAL ENGINEERING

## NEWS LETTER – (2022-23)


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**1AH19AE086**
**IV Year - Department of Aeronautical Engineering**

**Ms. ANJU JAGADISH**
**1AH19AE007**
**IV Year - Department of Aeronautical Engineering**

## ABOUT AERONAUTICAL DEPARTMENT

The Department of Aeronautical Engineering aims to provide talented, motivated and competent students with Aeronautical engineering curriculum of the highest quality, that will enable them to reach the global standard.

## COURSES OFFERED

### B.E – AERONAUTICAL ENGINEERING

With the intensions to fulfill the increasing demands of skilled manpower in Aero-based industries and hence to serve the society, the Department of Aeronautical Engineering was established in year 2010 with under Graduate Course in Bachelor of Engineering in Aeronautical Engineering under VTU, Belgaum. The course is approved by AICTE, New Delhi and nine batches have been graduated successfully.

## 2019 – 2023 BATCH STUDENTS

राष्ट्रीय प्रत्यायन बोर्ड
चौथा तल, ईस्ट टावर, एन. बी. सी. सी. प्लेस, भीष्म पितामह मार्ग, प्रगति विहार, लोधी रोड़, नई दिल्ली -110003
NATIONAL BOARD OF ACCREDITATION
4th Floor, East Tower, NBCC Place, Bhisham Pitamah Marg, Pragati Vihar, Lodhi Road, New Delhi 110003

File No. 25-175-2015-NBA

Date 29-06-2022

To
The Principal
**ACS College of Engineering, No.207,**
**Kambi Pura, Mysore Road, Bangalore-560074,**
**Karnataka**

**Subject: Further accreditation status on the basis of Compliance Report of the programs in Tier II offered by ACS College of Engineering, No.207, Kambi Pura, Mysore Road, Bangalore-560074, Karnataka.**

Sir,

This is regarding Compliance Reports submitted by **ACS College of Engineering, No.207, Kambi Pura, Mysore Road, Bangalore-560074, Karnataka** for the UG Engineering programs which were accredited by NBA in Tier-II for academic years 2018-19 to 2020-21 whose validity of accreditation had expired on 30.06.2021. The programs were granted accreditation for AY 2021-22 i.e up to 30-06-2022 due to present pandemic situation.

2. An Expert Team conducted data verification of the programs on 29th May, 2022. The report submitted by the Expert Team was considered by the concerned Committees constituted for the purpose in NBA. The Competent Authority in NBA has approved the following accreditation status to the programs as given in the table below:

| Sl. No | Name of the Program(s) (UG) | Basis of Evaluation | Accreditation Status | Period of validity | Remarks |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1. | Aeronautical Engineering | Tier-II June 2015 Document | Accredited | Academic Years 2022-2023 to 2024-2025 i.e. upto 30-06-2025 | Accreditation status granted is valid for the period indicated in Col.5 or till the program has the approval of the Competent Authority, whichever is earlier. |
| 2. | Biomedical Engineering | | Accredited | | |

3. It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

4. The programs have been granted accreditation for further 3 years. **ACS College of Engineering, No.207, Kambi Pura, Mysore Road, Bangalore-560074, Karnataka** should submit fresh online application under First Cycle SAR Tier II June 2015 document through eNBA portal at least five months before the expiry of validity of accreditation mentioned above.

5. The accreditation status awarded to the programs as indicated in the above table does not imply that the accreditation has been granted to **ACS College of Engineering, No.207, Kambi Pura, Mysore Road, Bangalore-560074, Karnataka** as a whole. **As such the Institution should nowhere along with its name including on its letter head etc. write that it is accredited by NBA because it is program accreditation and not Institution accreditation. If such an instance comes to NBA's notice, this will be viewed seriously.** Complete name of the program(s) accredited, level of program(s) and the period of validity of accreditation, as well as the Academic Year from which the accreditation is effective should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

6. The accreditation status of the above programs is subject to change on periodic review, if needed by the NBA. It is desired that the relevant information in respect of accredited programs as indicated in the table in paragraph 2,

Contd/..

## FACULTY DETAILS

| PARTICULARS | QUANTITY |
|---|---|
| TEACHING FACULTY | 16 |
| NON TEACHING FACULTY | 4 |
| COMPLETED Ph. D | 5 |
| PURSUING Ph. D | 5 |
| M.E/M.TECH/M.S | 11 |

## STUDENT DETAILS

| PARTICULARS | QUANTITY |
|---|---|
| I –YEAR | 45 |
| II – YEAR | 76 |
| III – YEAR | 65 |
| IV –YEAR | 86 |
| Total | 272 |

## DEPARTMENT LABORATORIES

- Aerodynamics Laboratory
- Propulsion Laboratory
- Structures Laboratory
- Flight Simulation Laboratory
- Mechanical Measurements and Metrology Laboratory
- Machine shop laboratory
- Design , Modeling and Analysis Laboratory
- Energy Conversion Laboratory
- Aero Modelling Laboratory
- Material Testing Laboratory
- Avionics and Instrumentation Laboratory
- IRNSS Laboratory
- Navigation and Space research lab

# DEPARTMENT LABORATORIES

## AERODYNAMICS LABORATORY

*This lab is having a Low Speed Subsonic Wind Tunnel with maximum velocity of 20 m/sec in the rectangular test section. It is used for measurement of pressure distribution over airfoils, determination of boundary layer over flat plate, flow visualization over delta wing model etc.*

## PROPULSION LABORATORY

*The laboratory facilitates various experiments related to heat transfer, combustion, multiphase flow, propulsion and thermal engineering. The students can work with many flow, pressure and temperature measuring sensors/ associated data acquisition systems of industrial standards for their experiments.*

## STRUCTURES LABORATORY

*Objective of this lab is to reinforce the concepts of aerospace structures/mechanics of structures, which pose significant application in Aerospace Engineering. Wide range of experimental options using Column buckling apparatus, Unsymmetrical bending / shear Centre and cantilever beam apparatus etc., are made available in this lab.*

## ENERGY CONVERSION LABORATORY

*This lab will help students to see how energy can be converted from one form to another. Students will observe the loss in useful energy as a result of such a conversion and measure the efficiency for such conversions.*

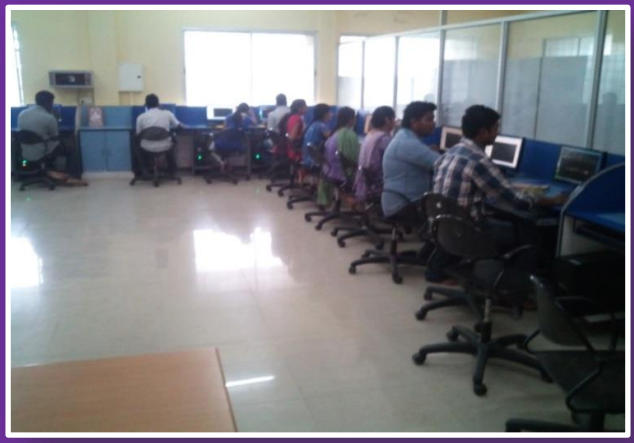
# DEPARTMENT LABORATORIES

## MEASUREMENTS & METROLOGY LAB

*The purpose of this laboratory is; to familiarize students with laboratory measuring devices, to study the measurements methods, to learn proper measuring techniques through simple measurements and to learn to express the results of calculations*

## MACHINE SHOP LAB

*Students learn how to use different machines and are trained on developing various models. Understand integral parts of lathe, shaping and milling machines and various accessories and attachments used.*



## DESIGN, MODELING & ANALYSIS LAB

*This is a lab where the students get opportunity to familiarize various modelling, drafting and analysis software packages such as AutoCAD, CATIA, SOLIDWORKS, Autodesk Hypermesh, etc. The design and analysis experience gained through CAD lab mould our students capable of contributing meaningfully in the design/analysis of payload/satellite structures in various space projects at institute level.*

## SIMULATION LABORATORY

*This laboratory deals with simulation and Estimation of the aircraft performance for various flight maneuvering conditions and atmospheric condition. The aircraft performance analysis is carried out with the MATLAB code, developed based on flight mechanics analytical expressions. This lab will provide a hands on experience for the students to work on various design features of aircraft for enhancing specific flight mission requirements.*

# DEPARTMENT LABORATORIES

## FOUNDRY & FORGING LAB

*To provide an insight into different sand preparation and foundry equipment. To provide an insight into different forging tools and equipment and arc welding tools and equipment. To provide training to students to enhance their practical skills in welding, forging and hand moulding.*

## MATERIAL TESTING LAB

*Material testing lab is used to perform destructive testing of different kind of materials and make the students to get the experience the mechanical characteristics of sample materials on first-hand basis.*

## FLIGHT SIMULATOR

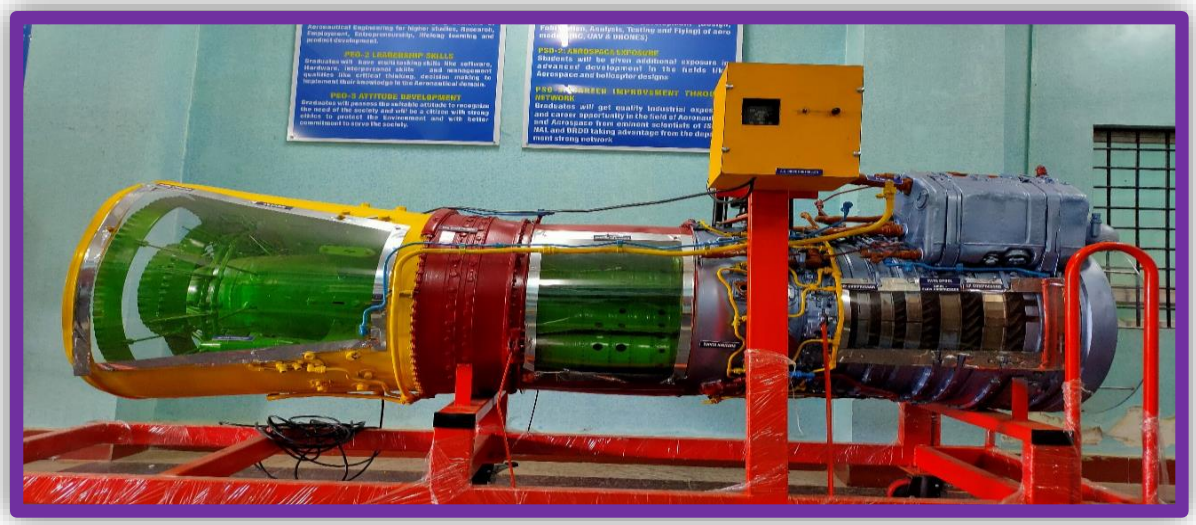
*Flight simulator is an advanced training platform focuses on general aviation which forms the basic building block for students/trainees. Learn & practice the concept of manoeuvring, navigation under visual or instrument flight conditions. Digital Avionics Radio stack gives the best training environment to practice radio and Flight navigation procedures*

## IRNSS LABORATORY

*IRNSS lab is having two multi-constellation receivers used for monitoring GPS and IRNSS signals round the clock. The received signal is used for IRNSS Navigation Receiver Field Trail and Data Collection.*

# RESEARCH FACILITIES

## Tumansky R – 25 – 300 Series Supersonic Jet Engine



The Russian Tumansky R – 25 – 300 Series Engine was built under license by HAL in India for MIG 21 BIS fleet aircraft. It is a supersonic jet engine with straight flow. The engine is having a feature of axial flow turbo jet engine with increased overall pressure ratio and airflow. It has a twin spool axial flow 8 stage compressor which comprises of 3 stage low pressure compressor and 5 stage high pressure compressors. The engine is having 10 can annular type combustion chambers.

## 14 Cylinder Radial Aircraft Engine

The **Pratt & Whitney R-1830 Twin Wasp** is an American air-cooled radial aircraft engine. Twin WASP 2 Row 14 Cylinder Radial Engine is air cooled with Turbo Super Charger. Power Rating is 1350 HP at 2800 RPM at 2000 ft height. Engine is driven with a 3 Bladed Hamilton Standard Propellers through a 16:9 reduction gear. The engine was fitted on B-24 Bomber Aircraft used by US Navy for patrolling, anti-shipping and anti-submarine bombing mission.

## RESEARCH EQUIPMENTS DETAILS

### Multi View GNSS Receiver


## UPCOMING FACILITY DETAILS

### Supersonic Wind Tunnel

- Nozzles with Mach numbers 2 & 2.5
- Test Section Size 100mm (H) 100mm (W) 300mm(L)
- Schlieren setup with 6inch diameter parabolic mirrors and DSLR camera
- Computerised DAQ with Lab view analysis software, 8 channel data acquisition
- Steady state run time = 30 seconds (maximum)

# MEMORANDUM OF UNDERSTANDING SIGNED BY THE DEPARTMENT

| S.No | Company/Organization/ Institution Name | Signed on | Activities |
|---|---|---|---|
| 1. | Aerotics Technologies, Bangalore | 2021-22 | Internship, Training and Placement in UAV Field |
| 2. | Ray Dynamics Pvt Ltd, Coimbatore | 2020-21 | Flight Simulator Training and Placements |
| 3. | SS Technologies, Bangalore | 2020-21 | Technical Skill Training and Placement |
| 4. | Aerolance Pvt Ltd, Bangalore | 2020-21 | Internship, Training and Placement |
| 5. | Pongu Ventures Pvt Ltd, Chennai | 2020-21 | Innovation, Start-up and Entrepreneurship |
| 6. | Aero Engineers Pvt Ltd, Bangalore | 2019-20 | Share UAV training on mutually beneficial area |
| 7. | Gloinnt Solutions Pvt Ltd | 2019-20 | Project Training and placement |
| 8. | Space Applications Centre, ISRO, Ahmedabad | 2018-19 | IRNSS Receiver Deployment in ACSCE Campus for Field Trail. Received Two Receivers Worth Rs.24 Lakhs INR |
| 9. | All flight training international Ltd | 2018-19 | Student pilot training program and Airline pilot training development program |
| 10. | Rile India lab | 2018-19 | To provide STEM skills to the students, Development of nano satellites |

## PROGRAMME ORGANIZED IN THE DEPARTMENT

| S.No | PROGRAMME |
|---|---|
| 1 | Awareness and Support Program on Higher Education in abroad – 18.10.2022 |
| 2 | Seminar on Aircraft Design and manufacturing – 20.10.2022 |
| 3 | Kalam'91: National Level Inter college fest – 02.11.2022 & 03.11.2022 |
| 4 | Technical talk on "Tracking Radars for Launch Vehicle Mission Support" – 09.11.2022 |
| 5 | Industrial Visit to CADMAXX Pvt Ltd – 15.11.2022 |
| 6 | Workshop on Design and Analysis of Commercial Aircraft – 01.12.2022 & 02.12.2022 |
| 7 | Skill Development Program on Satellite Navigation – 07.12.2022 |
| 8 | Skill Development Program on Evolution of Engineering Science in India – 08.12.2022 |
| 9 | AICTE Activity at Sri KalaJyothi Trust, Kengeri – 17.12.2022 |
| 10 | Workshop on Design Thinking, Critical thinking and Innovation Design – 22.12.2022 |

## PROGRAMME ORGANIZED IN THE DEPARTMENT

| S.No | PROGRAMME |
|---|---|
| 11 | Seminar on Verification and Validation of complex aircraft systems – 16.12.2022 |
| 12 | Industrial Visit to Satish Dhawan Space Centre - SDSC, ISRO – 28.02.2023 |
| 13 | Industrial Visit to U R Rao Satellite Centre, Bangalore – 11.04.2023 |
| 14 | Air traffic control and Guidance for Soft Landing – 13.04.2023 |
| 15 | Career Guidance for Aeronautical Engineering Students – 27.04.2023 |
| 16 | National Conference on Recent Innovations and Challenges in Aviation Technology - 09.05.2023 |
| 17 | Seminar on Structural Design – An Industrial Perspective – 17.05.2023 |
| 18 | Talk on Applications of Artificial Intelligence in Aerospace Engineering – 03.06.2023 |
| 19 | Workshop on Drone design in Aviation – 27.06.2023 |
| 20 | Workshop on IPR and IP Management for startups – 20.06.2023 |

# AERONAUTICAL DEPARTMENT NEWSLETTER

## AWARENESS AND SUPPORT ROGRAM ON HIGHER EDUCATION IN ABROAD

## SEMINAR ON AIRCRAFT DESIGN AND MANUFACTURING


# AERONAUTICAL DEPARTMENT NEWSLETTER




## KALAM'91: NATIONAL LEVEL INTER COLLEGE FEST

# AERONAUTICAL DEPARTMENT NEWSLETTER

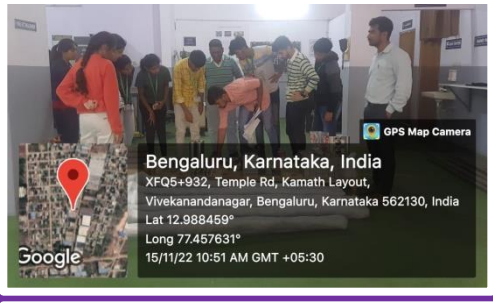


## TECHNICAL TALK ON " TRACKING RADARS FOR LAUNCH VEHICLE MISSION SUPPORT "



## SKILL DEVELOPMENT PROGRAM ON SATELLITE NAVIGATION

# AERONAUTICAL DEPARTMENT NEWSLETTER


# INDUSTRIAL VISIT


# AERONAUTICAL DEPARTMENT NEWSLETTER

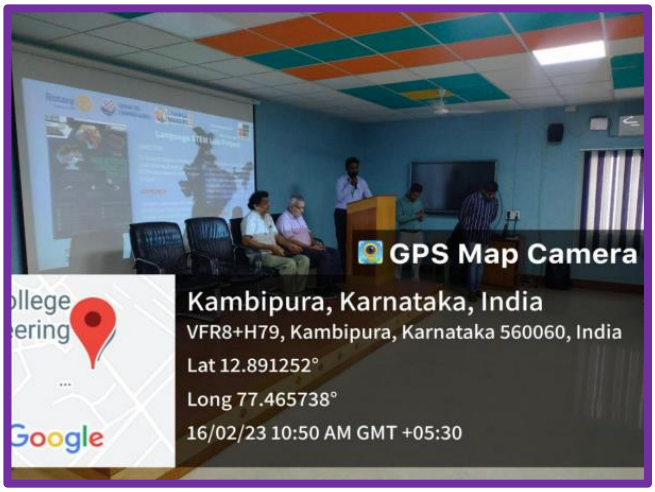

## AICTE ACTIVITY AT SRI KALAJYOTHI TRUST KENGERI


# AERONAUTICAL DEPARTMENT NEWSLETTER



## WORKSHOP ON DESIGN THINKING, CRITICAL THINKING AND INNOVATION DESIGN







## SEMINAR ON VERIFICATION AND VALIDATION OF COMPLEX AIRCRAFT SYSTEMS

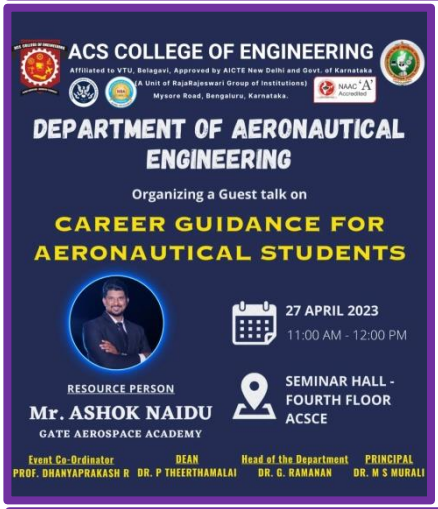
# AERONAUTICAL DEPARTMENT NEWSLETTER



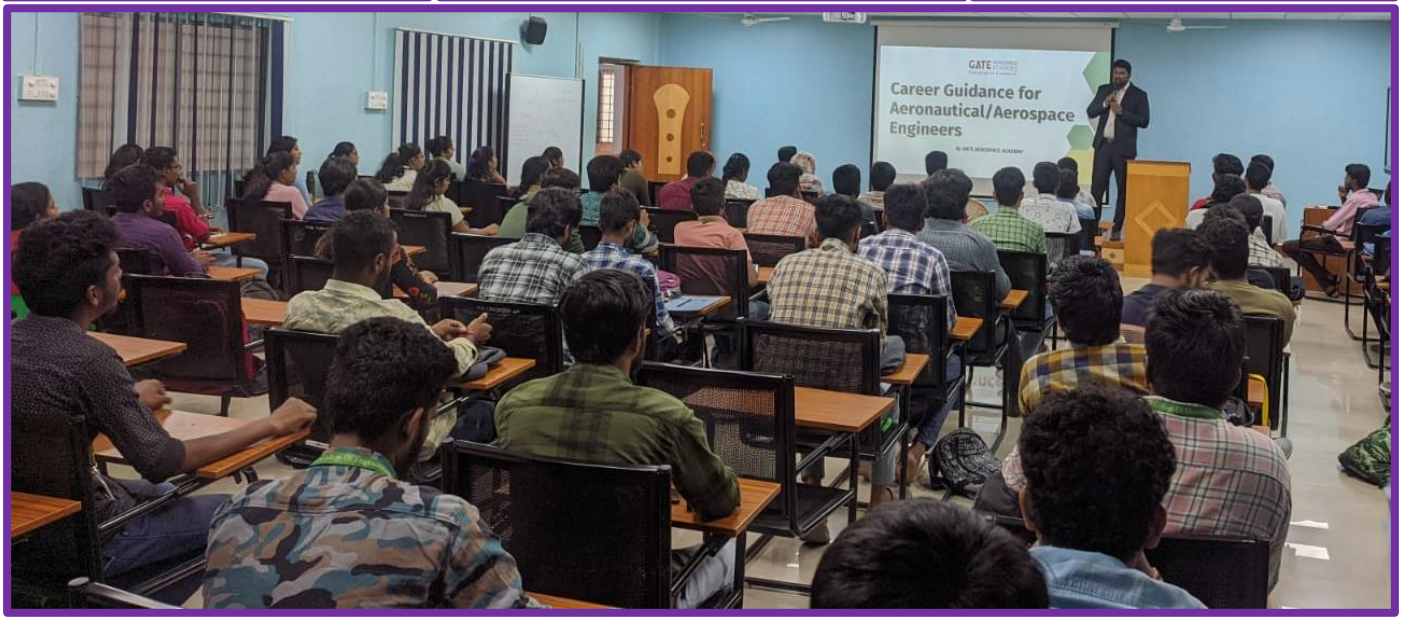
## INDUSTRIAL VISIT



# AIR TRAFFIC CONTROL AND GUIDANCE FOR SOFT LANDING

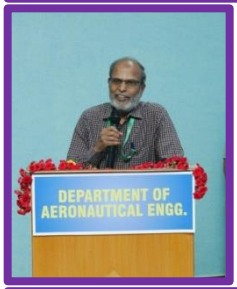




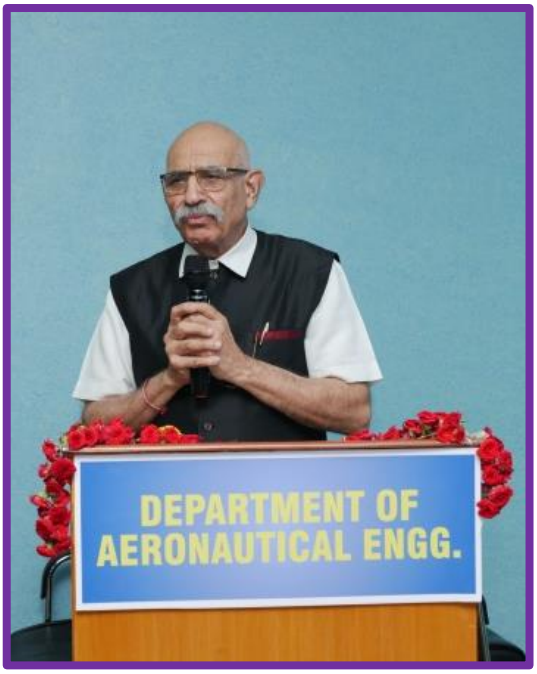

# CAREER GUIDANCE FOR AERONAUTICAL ENGINEERING STUDENTS

# AERONAUTICAL DEPARTMENT NEWSLETTER





## National Conference on Recent Innovations and Challenges in Aviation Technology





# FACULTY PUBLICATIONS

| S.No | Name of the Journal with ISSN No. | Title of the Paper | Volume & Page Nos. | Year and Month of Publication |
|---|---|---|---|---|
| | | **Dr G RAMANAN** | | |
| 1 | Materials Today: Proceedings | Fabrication and wear characterization of stir cast AA7075-TiCp reinforced composite. | 52, 1216-1222 | 2022 |
| 2 | Materials Today: Proceedings | Investigation of bio degradable natural fibers reinforced hybrid composites for aircraft structures. | 52, 1211-1215 | 2022 |
| 3 | Materials Today: Proceedings | Static structural analysis and testing of aircraft wing spar using composite material | 64, 416-424 | 2022 |
| 4 | Intelligent Manufacturing and Energy Sustainability: Proceedings of ICIMES | Influence of MoS2 with TiC on the Tribological and Wear Properties of Hybrid Aluminum Composites. | pp. 275-28 | 2022 |
| 5 | Materials Today: Proceedings | Parametric study of FSW process on AA6061-Activated carbon composite using particle swarm optimization. | | 2023 |
| 6 | Intelligent Manufacturing and Energy Sustainability: Proceedings of ICIMES | Performance Study and Analysis of an UAV Airfoil at Low Reynolds Number. | pp. 107-113 | 2022 |
| | | **Mr RADHAKRISHNAN P** | | |
| **7** | International Journal of Aerospace Engineering | Comparative Study and Aerodynamic Analysis of Rectangular Wing Using High-Lift Systems. | 5813557 | 2023 |

# FACULTY PUBLICATIONS

| S.No | Name of the Journal with ISSN No. | Title of the Paper | Volume & Page Nos. | Year and Month of Publication |
|---|---|---|---|---|
| | | **DR INAMUL HASAN** | | |
| **8** | *Advances in Materials Science and Engineering* | Wind Tunnel Testing and Validation of Helicopter Rotor Blades Using Additive Manufacturing. | 4052208 | 2022 |
| **9** | *Transactions of the Canadian Society for Mechanical Engineering* | Aerodynamic performance analysis of a supercritical airfoil in the helicopter main rotor. | *46*(2), 436-458 | 2022 |
| **10** | *Advances in Materials Science and Engineering* | Streamline Effect Improvement of Additive Manufactured Airfoil Utilizing Dynamic Stream Control Procedure. | 1252681 | 2022 |
| **11** | *Intelligent Automation & Soft Computing* | Forward Flight Performance Analysis of Supercritical Airfoil in Helicopter Main Rotor. | *33*(1) | 2022 |
| **12** | *Scientific Programming* | A Global Optimization Algorithm for Intelligent Electromechanical Control System with Improved Filling Function | 3361027 | 2022 |
| | | **MR DHANYA PRAKASH R BABU** | | |
| **13** | IASC Tech Science Press Article 2022.023252 | Forward Flight Performance Analysis of Supercritical Airfoil in Helicopter Main Rotor | vol.33, no.1 | 2022 |

## PLACEMENT DETAILS – 2022-2023

**NAVITHA N**
**IAH19AE049**
NEVITON

**CHITRANJAN N OZHA**
**IAH19AE016**
SPACE FIELDS

**DHARSHAN B**
**IAH18AE010**
HAL

**LAKSHMI S**
**IAH19AE035**
ALTEN

**PRASAD**
**IAH19AE055**
SAFRAN
AEROSPACE · DEFENCE · SECURITY

**SURIMENU TARUN AYYAPPA**
**IAH17AE020**
IndiGo

**AKHIL Y**
**IAH19AE086**
Lufthansa

**SWARAJ KOLASEKAR**
**IAH19AE0031**
AIRBUS

**RAHUL N**
**IAH19AE060**
DRDO

## PLACEMENT DETAILS – 2022-2023

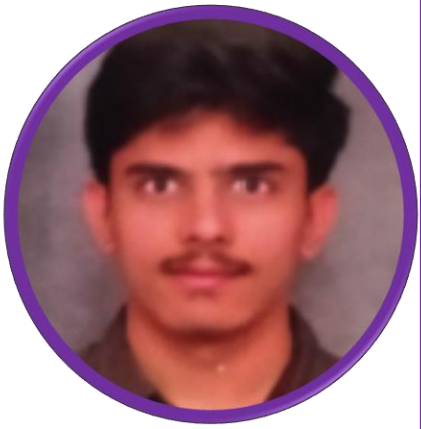
**HARSHITH K**
**1AH19AE026**
SONOVISION INNOVATIVE SOLUTIONS ORTEC GROUP

**VINODHINI A**
**1AH19AE084**
FACE Prep

**SANJITH V**
**1AH19AE067**
square yards

**VIDYASHREE P**
**1AH19AE082**
square yards

**RAKESH K**
**1AH19AE061**
Akasa Air
IT'S YOUR SKY



**AMOGH K P**
**1AH19AE006**
IBM

**NAVEEN H J**
**1AH19AE048**
HAL

**HARSHA VARUN J**
**1AH19AE024**
HAL

**GAGANA T N**
**1AH19AE021**
accenture

# HIGHER STUDIES 2022-2023

University of Sheffield

**LAVANYA A R**
**1AH19AE036**

**DHANYASHREE**
**1AH19AE019**

**RACHITA B V**
**1AH19AE058**

Cranfield University

# OUR RECRUITERS

# ACADEMIC YEAR 2022-23 ( ODD SEMESTER )

## CLASS TOPPERS

| BATCH | I RANK | II RANK | III RANK |
|---|---|---|---|
| **II YEAR – III SEMESTER** | | | |
| 2021 – 2025 |  DHANUSH G K (1AH21AE015) |  BALU S (1AH21AE008) |  SAI RISHI KESHAVAN (1AH21AE050)<br>  MANGROLIYA KEVIN (1AH21AE035) |
| **III YEAR - V SEMESTER** | | | |
| 2020 – 2024 |  SYEDEEN KHAN (1AH20AE057) |  POOJA T E (1AH20AE037) |  GEETHANJALI M (1AH20AE020) |
| **IV YEAR – VII SEMESTER** | | | |
| 2019 – 2023 |  SYED TAYEEB AHMED (1AH19AE077) |  LAVANYA A R (1AH19AE036) |  ANJU JAGADISH (1AH19AE007) |

# ACADEMIC YEAR 2022-23 ( EVEN SEMESTER )

## CLASS TOPPERS

| BATCH | I RANK | II RANK | III RANK |
|---|---|---|---|
| **II YEAR – IV SEMESTER** | | | |
| 2021 – 2025 |  BALU S (1AH21AE008) |  DHANUSH G K (1AH21AE015) |  SAI RISHI KESHAVAN (1AH21AE050) |
| **III YEAR - VI SEMESTER** | | | |
| 2020 – 2024 |  SYEDEEN KHAN (1AH20AE057) |  BINDIYA P (1AH20AE008) |  GEETHANJALI M (1AH20AE020) |
| **IV YEAR – VIII SEMESTER** | | | |
| 2019 – 2023 | **I RANK** | **II RANK** | |
| |  TIPPANAGOUDAR 1AH19AE005 |  RANJITHA M P 1AH19AE063 |  SNEHA S K 1AH19AE071 |
| | **III RANK** | | |
| |  BRUNDA G S 1AH19AE013 |  DHANYASHREE 1AH19AE019 |  Y AKHIL 1AH19AE086 |


WHEN EVERYTHING SEEMS TO BE GOING AGAINST YOU, REMEMBER THAT THE AIRPLANE TAKES OFF AGAINST THE WIND, NOT WITH IT.
HENRY FORD