

ALBATROSS

2024-2025



VISION

- To mould the aeronautical students to achieve the excellence in the field of technical education, research, innovation, entrepreneurship and industry related development to meet the challenges in society.

MISSION

- To impart high quality technical education and unique interdisciplinary experiences.
- To promote research, innovation and entrepreneurship culture among students for the benefits of society.
- To collaborate with industry and institute for technology up-gradation.

NEHRU INSTITUTE OF TECHNOLOGY



Principal's Message:

It gives me immense pleasure to welcome you all to NIT, an eco-friendly campus that strives with a goal to attain excellence by empowering students with sound knowledge, wisdom and experience. Our strength lies in creating pleasant ambience with an excellent infrastructure, qualified and experienced faculty commitment to personal care, motivation to excel in academic, extra-curricular activities and continuous interaction with industry. Over the past 10 years the college witnessed a string blend of state-of-the-art infrastructure and dedicated human resource committed to provide professional education with trust on creativity and innovation. The motivating environment in NIT for knowledge, assimilation, generation and dissimulation with a sense of social responsibility, human values and concern for environment has curved apiece for itself among the best technical institutes.

“A desire can change nothing, a decision can change something, but a determination can change everything”

Be committed with strong determination to learn and reach new horizon, NIT will shape you for a successful and rewarding career.



“FUELLING AND SKYROCKETING YOUR DREAMS”

With Extreme gladness, I welcome you all to the Department of Aeronautical Engineering established in the year of 2008 with a vision to produce technically competent engineers for serving the nation.

The Department is Longstanding in the institute by crossing a decade and becomes a primary identity of the institution through the laurels it has attained so far.

HOD's Message:

The Department has produced many university rank holders in end semester examinations through knowledge dissemination in a well-structured academic module in par with universal standards. The Department caters the technical demand of every student during course duration through detailed lecture and practical sessions, thought provoking technical workshops, seminars, conferences and activity-based competitions.

The Department has a very strong industry tie up with many leading industries and startups to have an enriched knowledge about the discipline for preparing the student community to meet the swift changes in the industry under all aspects. The student community actively participates in sessions about the latest developments of the discipline to understand the changes through expert talks from premier institutions such as IIT, NIT and top-notch industries. The rigorous and vibrant faculty team represents the department by contributing high value research articles to journals, book chapters and conference proceedings. The faculty team deliberately involves them in molding the student for transition to be a notable entrepreneur or an outstanding skilled professional. UG degree in Aeronautical Engineering opens up favorable opportunities for high studies and careers with leading government organizations such as ISRO, NASA, DRDO, HAL, NAL and MRO with a bright future.

I assure the success of every student joining B.E., Aeronautical Engineering at NIT to foresee a career with abundant academic prospects and professional values.

From the Editor's desk:



Dear students,

Happy To Share the News Letter for the academic year 2024-2025 from the AERO Department.

The purpose of the newsletter is to primarily focus on the Achievements of AERO students and faculty members in Curricular, Cocurricular, and Extra-curricular Activities.

I'd like to thank all of my Team Members for their tiredness efforts in launching this Newsletter. We are grateful to our management and principal for their encouragement and support.

STUDENT EDITORIAL MEMBER:



Mr. KAMALESH. R
B.E AERONAUTICAL ENGINEERING
III YEAR

ABOUT THE DEPARTMENT

Aeronautical Engineering is one of the most challenging fields of engineering with a wide scope for growth. The primary job of an Aeronautical Engineer is to devise aircraft and propulsion systems, but with time, the engineer is given many more responsibilities to carry out. Our students have undergone various recent software like ANSYS, MATLAB, and NASTRO. We are aware of the keen knowledge of real-time application, overhaul, aviation systems, and maintenance testing. Our students take part in internships in HAL, NAL, AIRBUS MAHINDRA, DRDO, and ISRO. Our department holds around 6 students in Anna University ranking thus far. Not only had our alumni placed in BOEING, AIRBUS, HAL, AMAZONS, and various airports.

The department has a group of 11 well-qualified and experienced Professors and dynamic young staff who hold their master's degrees in their area of interest from renowned institutions. Among them, three faculties have obtained a Ph.D. and three faculties are now pursuing it. Faculties published papers in their research domains.

The department has full-fledged and well-established laboratory facilities. The Aerodynamics laboratory has equipment like Pulse jet engines and ram jet engines apart from the equipment required for the curriculum. Aero Engine lab has both jet and piston engines; the Propulsion laboratory is fully equipped with a list of equipment as prescribed by the affiliated university. In CAD/CAM, the latest versions of CATIA, SOLIDWORKS, ANSYS, and CNC Software are available for students. Internet facility has been enabled in many computers for the faculty to effectively search for useful study materials. The aircraft system laboratory is provided with Cessna aircraft with aviation instruments.



The department has well equipped class rooms with necessary teaching aids viz., LCD projectors with white board and Smart Board in order to enable power point presentations for specific/necessary lecture topics. the excellence of course delivery have been emphasised with NPTEL video lectures which is availble in Digital library. The department has signed MoU with the LEADING organizations/industries related to our Aero industries. The nature of MoU is enriching technical education imparted to students, adoption of advanced technology for design solutions, regular exchange of resource and knowledge and joint programmers.

In the view of enhancing the practice al knowledge of the students in-plant trainings, Industrial visits are arranged regularly in and around Coimbatore. In order to enable students easily face the placement procedures and interview processes, they are being trained on the soft skills enhancement, and inter – personal programmers namely Value-Added Programmers along a part of their curriculum.

STAFF ACHIEVEMENTS

PAPERS PUBLICATION IN JOURNALS

- Vijaykumar. P, All examination of evacuated tube collectors in comparison to direct flow and heat pipe for the purpose of solar water heater, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, ISSN number: 1556-7230.
- Vijaykumar. P, Finite element analysis of friction stir welding process to predict - temperature distribution, Matéria (Rio de Janeiro), ISSN number: 1517-7076.
- Vijaykumar. P, Performance optimization of pulsating heat pipe integrated compound parabolic solar collector using hybrid Red Fox optimizer based DNN (DNN-Rdfox), Solar energy, ISSN number: 0038-092X.
- Vijayakumar. P, Numerical simulation of micro-extrusion: influence of die entry angles and friction on deformation behavior of AA6063 aluminum alloy, Matéria (Rio de Janeiro), ISSN number: 1517-7076.
- Satheesh Kumar S, Experimental analysis on the thermoelectric effect of various solid-state devices used for direct conversion of thermal energy into electrical energy, Results in Engineering, ISSN number: 2590-1230.
- R.Anand, Optimization and Characteristics of Multimodal Binder on Polymer Nanocomposite for Lightweight Applications, J. Environ. Nanotechnology, doi:10.59429/ace.v7i3.5537.
- R.Anand, Energy-efficient FDM printing of sustainable polymers: Optimization strategies for material and process performance, Applied Chemical Engineering, [https://doi: 10.59429/ace.v7i3.5537](https://doi.org/10.59429/ace.v7i3.5537).
- V. Saravanan, formulation, characterization and in vitro evaluation of betulinic acid-loaded lipid nanocarriers for enhanced bioavailability and sustained release in lung cancer therapy, Cuestiones de fisioterapia, <https://doi.org/10.48047/jr94mm57>.
- R Allocious Britto Rajkumar, Material selection for automotive engine mounting bracket using multiple MCDM techniques and numerical simulation, International Journal on Interactive Design and Manufacturing (IJIDeM), <https://doi.org/10.1007/s12008-025-02267-w>.
- R Allocious Britto Rajkumar, Artificial Intelligence (AI)-based Friction Stir Welding for Enhanced Material Joining Efficiency, Journal of Systems Engineering and Electronics (ISSN NO: 1671-1793) Volume 34 ISSUE 11 2024, <https://doi.org/10.5281/zenodo.14064895>.
- Dr V. Saravanan, Advancing information technology with computing – soft computing techniques for adaptive and robust systems, ICTACT JOURNAL ON SOFT COMPUTING, DOI: 10.21917/ijsc.2024.0492.
- Dr.T.Manikandan, Evaluation of mechanical, thermal, and flammability properties in biochar-infused polymer composites from bael fruit and cashew shells: a comparative study, Biomass Conversion and Biorefinery, <https://doi.org/10.1007/s13399-024-06020-3>.
- T.Banu, Examining the Potential for Employing Biowaste Prosopis juliflora Bark as an Additive in Particulate-Reinforced Polymer Based Composite Materials, Waste and Biomass Valorization, <https://doi.org/10.1007/s12649-024-02726-7>.
- T.Banu, Innovative Metal Coating Strategies for Enhanced Engine Performance and Emission Mitigation in Internal Combustion Engines, Revista de Chimie, <https://doi.org/10.37358/Rev.Chim.1949Rev>.
- V.Rajasubramanian, Material selection for automotive engine mounting bracket using multiple MCDM techniques and numerical simulation, International Journal on Interactive Design and Manufacturing (IJIDeM), <https://link.springer.com/article/10.1007/s12008-025-02267-w>.

BOOK PUBLICATION

1. **Vijayakumar. P**, "Solar Energy: Advancements in Technology", Metro Tech Publishing House, 2024, ISSN Number: 978-81-959943-2-8.
2. **B.S. Navaneeth**, Wind Energy: Innovations and Challenges, Metro Tech Publishing House, 2024, ISSN Number: 978-93-48582-68-3.
3. **B.S. Navaneeth**, formability characteristics of AL- 8011 alloy, Taylor & Francis, 2025, ISSN Number: 9781003545941.
4. **R. S. Navaneeth**, "AI and Ballistics Military Applications", Taylor & Francis, January 2025, ISBN Number: 9781003534591.
5. **Satheesh Kumar S**, "Introduction to Renewable Energy in Advanced Energy Trends", Metro Tech Publishing House, October 2024, ISBN Number: 978-81-959943-0-4.
6. **Satheesh Kumar S**, "Geothermal Energy: Unlocking Deep Earth Potential in Renewable Energy", Metro Tech Publishing House, November 2024, ISBN Number: 978-93-48682-23-2.
7. **Satheesh Kumar S**, "Advanced Trends in Renewable Energy", Metro Tech Publishing House, October 2024, ISBN Number: 978-81-959943-0-4.
8. **R. Allociuos Britto Rajkumar**, "Aircraft Systems and Instruments", Metro Tech Publishing House, July 2024, ISBN Number: 978-81-959943-1-1.
9. **R. Anand**, "Sustainability and the Environmental Impact of Renewables", Metro Tech Publishing House, November 2024, ISBN Number: 978-93-48682-26-3.
10. **R. Anand**, "NORA IoT Network for Instant Forest Fire Detection and Alert System", B P International, November 2024, ISBN Number: 978-93-48838-40-7.
11. **Dr. V. Saravanan**, "Engineering Ethics", R K Publications, February 2025, ISBN Number: 978-93-48655-81-3.
12. **Dr. V. Saravanan**, "Educational Research", R K Publications, February 2025, ISBN Number: 978-93-48655-72-1.
13. **T. Banu**, "Low Speed Aerodynamics", R K Publications, November 2024, ISBN Number: 978-93-48020-86-4.
14. **V. Rajasubramanian**, "Renewable Energy Policies and Global Trends", Metro Tech Publishing House, October 2024, ISBN Number: 978-81-959943-5-9.

CONFERENCES PRESENTED

1. **Mr. B.S. Navaneeth**, Characterization of Basalt Fiber Reinforced Aluminum (6063) Sheet Composite Material, “National Conference on Innovations in Science, Technology, Agriculture & Healthcare Applications (NC ISTAH 2024)” on August 2024.
2. **Mr. R. Anand**, Improving Aerodynamic Performance of NACA 2412 Airfoil Using Dimpled Surfaces, “National Conference on Innovations in Science, Technology, Agriculture & Healthcare Applications (NC ISTAH 2024)” on August 2024.
3. **Mr. Satheesh Kumar S**, Comparative Study of Characteristics and Applications of Aluminum Alloy Series, “1st International Conference on Recent Advancements in Materials Science and Technology” on November 2024.
4. **Mr. R. Anand**, Enhancing Industrial Safety Helmets: Development and Evaluation of Epoxy-Based Glass and Basalt Fiber Composites, “ICMIET-2024 Journal of Physics”.
5. **Mr. R. Anand**, Advancements In Scramjet Technology with Hypersonic Inlet, “National Conference on Innovations in Science, Technology, Agriculture & Healthcare Applications (NC ISTAH 2024)” on August 2024.
6. **Ms. T. BANU**, Numerical Investigation Of Separation Bubble In Curved Isolator, “National Conference on Innovations in Science, Technology, Agriculture & Healthcare Applications (NC ISTAH 2024)” on August 2024.
7. **Ms. T. BANU**, Shape Morphing Automobile Structures, “AIP Publishing” on August 2024.

PATENT

PUBLICATIONS

1. Vijayakumar P - "Resonant Triboelectric Nanogenerator for Efficient Harvesting of Ambient Vibrational Energy in E-Vehicles with Integrated Control System" published on June 2024.
2. Vijayakumar P - "Design and Analysis of Gas-Gas Pintle Injectors" published on September 2024.
3. Vijayakumar P - "Performance Analysis Method for Lubricant Oils Using Reichert Test to Evaluate Extreme Pressure Properties of Lubrication and Cutting Fluids" published on August 2024.
4. Vijayakumar P - "Minimizing Carbon Footprint Through Wing Design Optimization" published on October 2024.
5. Vijayakumar P - "AI-Based Granular Fertilizer Dispensing Drone" published on October 2024.
6. Vijayakumar P - "A Novel Thermoplastic Resin Composite Material for Automobile Applications" published on October 2024.
7. Vijayakumar P - "Design Thinking Methodology for Enhanced Protection in Sports and Two-Wheeler Helmets Using Honeycomb" published on November 2024.
8. Vijayakumar P - "Smart Multi-Control Autonomous Vehicle" published on November 2024.
9. Vijayakumar P - "AI Driven UAV: Automated Weed Control Systems" published on December 2024.
10. Vijayakumar P - "IoT Based Pneumatic Operated Rice Collecting and Cleaning Machines" published on February 2024.
11. Vijayakumar P - "Integrating Data Intensive Approaches for Enhanced Crop Yield Predictions" published on December 2024.
12. Vijayakumar P - "Design Thinking-Based Optimized Aerospike Nozzle for Adaptive Thrust And Altitude Efficiency" published on February 2025.
13. B. S. Navaneeth - "AI Integrated Smart Agricultural Rooftops for Urban Building" published on February 2025.

14. Dr. V. Saravanan - "Drying Machine for Fruits" published on December 2024.
15. Dr. V. Saravanan - "Novel Pest Capturing Agriculture Machine" published on October 2024.
16. Dr. V. Saravanan - "Automatic and Smart Rotary Evaporator" published on November 2024.
17. Satheesh Kumar S - "Smart Energy Meter for Efficient Energy Utilization" published on July 2024.
18. Satheesh Kumar S - "Mathematical Modeling for Optimizing Smart Food Packaging in Urban Logistics" published on February 2025.
19. Satheesh Kumar S - "Autonomous Crop Monitoring Using Unmanned Aerial Vehicle" published on January 2025.
20. Satheesh Kumar S - "AI-Integrated Smart Agricultural Rooftops for Urban Buildings" published on February 2025.
21. Allocuios Britto Rajkumar R - "IoT-Based Smart Mirror with an Information Display System" published on August 2024.
22. R. Anand - "Enhancing Language Proficiency in Higher Education Through Machine Learning-Based Assessments and Feedback Systems to Improve Academic Performance" published on November 2024.
23. R. Anand - "Enhancing E-Learning with Advanced Machine Learning Techniques to Optimize Student Performance in English as a Foreign Language" published on October 2024.
24. R. Anand - "Machine Learning and Graph Theory for Attack Detection and Route Optimization in RF Networks" published on November 2024.
25. Dr. T. Manikandan - "English Grammar Error Highlighting Device" published on June 2024.
26. Dr. T. Manikandan - "Autonomous Crop Monitoring Using Unmanned Aerial Vehicle" published on January 2025.
27. T. Banu - "Underwater Drone for Detecting Microplastic" published on June 2024.
28. V. Rajasubramanian - "AI Driven UAV: Automated Weed Control Systems" published on December 2024.

Funds from Government And Non-Government Agencies:



Prof.R.Allocious Britto

Received fund of Rs. 1,00,000/- for final year project from Balakamalam Environmental Fund.



Department MOU

The department of Aeronautical Engineering has signed MOU with the following Industries in the last year.

1. Lyra Aerospace.
2. Greentech Aviation.
3. Mannschaft Engineering Solutions Pvt Ltd.
4. Garuda Aerospace Pvt Ltd.
5. Airport Authority of India.

ACADEMIC PERFORMANCE OF THE STUDENTS

BEST STUDENT CO CURRICULAR ACTIVITY

- 1.P.Hariprakash(I prize in Technical Quiz)
- 2.T.Surya(I prize in Glider Event)
- 3.R,Sivabalan(II Prize In Glider Plane)

AERONAUTICAL ENGINEERING

BEST OUTGOING

Karthick
Srinivas A

HIGH CGPA

P.Gobi Shankar
Akash P
A.Karthick Srinivas

BEST STUDENT

D.Manoj
S.Lidvin Prabhu

BEST STUDENT EXTRA CURRICULAR ACTIVITY:

1. Surendiran D,
Sudheskar R,
(1st Prize in
Basketball,
Salem
Tournament).
2. Sudheskar R,
(3rd price in
Hammer throw,
Anna
University
Zonal
Competition).

BEST INNOVATOR

Ierick Kumar P
Got Working Space
in IIT-Madras for
his project idea.

BEST ENTRY IN SUSTAINABILITY
HACKATHON CHALLENGE 2023:
Sre Manjjunaatheswaran

SMART INDIA

HACKATHON FINALISTS:

1. Aswath S, 2. Deepak R
3. Kavin Kishore V, 4. Pothiyalagan P
5. Rathanakaram Sai Praneeth Raju
6. Syedunnisha A

PROGRAMMES ORGANISED BY THE DEPARTMENT

1. Advanced Trends in Renewable Energy on National Energy Conservation Day, Seminar, 14.12.2024.
2. Design Innovation for Successful career in the field of Aeronautics, Space and Defense for Aeronautical Engineer, Seminar, 14.03.2025.
3. Guest lecture on "Currents and Curiosities of Exploring Fluid Mechanics", Guest Lecture, 22.10.2024.
4. Air Force Station Defense Expo, 15.8.2024.
5. Air Force Station Defense, 19.11.2024.
6. U R RAO Satellite Centre, Bangalore, 12.02.2025.
7. HAL, Bangalore, 12.02.2025.

FACULTY DEVELOPMENT PROGRAM

1. R Allocious Britto Rajkumar attended “Funding Opportunities for women entrepreneurs” as a Chief guest in Avinashilingam University, February 2025.
2. Satheesh Kumar S attended “Basics of IPR and its importance for Innovators and Entrepreneurs” as a Chief guest in JCT College of Engineering and Technology, November 2024.

HIGHLIGHTS OF 2022-2023

CENTRE FOR STAFF AFFAIRS AND INSTITUTION GOVERNANCE

FACULTY INDUCTION PROGRAMME

Participation Certificate

This is to certify that Dr. / Mr. / Mrs. T. Banu
has actively participated in Five Days Faculty Induction Programme organized by Centre for Staff Affairs and Institution Governance, Nehru Institute of Technology, Coimbatore From 25th July 2022 to 29th July 2022.



E-Certificate of Participation Five days FDP ON "ME8693-HEAT AND MASS TRANSFER" **Mr.S.Satheesh Kumar** Assistant Professor /Aeronautical

NEHRU INSTITUTE OF TECHNOLOGY, CBE
has attended the Five days online Faculty Development Programme on
"ME8693-HEAT AND MASS TRANSFER" Organized by Department of
Mechanical Engineering held from 23/01/23 to 28/01/23.

Dr.G.Mahesh



Dr.S.Manoharan



E-Certificate of Participation Five days FDP ON "CE3391-FLUID MECHANICS AND MACHINERY" **Mr.S.SATHEESH KUMAR** Assistant Professor(SG) / Aeronautical Engineering

NEHRU INSTITUTE OF TECHNOLOGY,CBE
has attended the Five days online Faculty Development Programme on
"CE3391-FLUID MECHANICS AND MACHINERY" Organized by Department of
Mechanical Engineering held from 07/08/23 to 11/08/23.

Dr.G.Mahesh



Dr.S.Manoharan

CERTIFICATE

This is to certify that
Prof. / Dr. / Mr. / Ms. I. Manikandan
from Dept. of Aero, NIT
has participated in the
**7th INTERNATIONAL CONFERENCE ON
SCIENCE, ENGINEERING AND TECHNOLOGY (ICSET - 2022)**
held virtually on 28th and 29th April 2022.
He / She also delivered a Keynote Address / an Invited Talk /
Chaired a Session / Presented a Paper Entitled

This is to certify that
Dr.T. MANIKANDAN
NEHRU INSTITUTE OF TECHNOLOGY
has participated in One Week Faculty Development Programme
on
**"INNOVATIVE AND EMERGING THRUST AREAS OF
CIVIL & MECHANICAL ENGINEERING"**
organized by
DEPARTMENT OF CIVIL & MECHANICAL ENGINEERING
(Accredited by NBA)
&
INSTITUTION'S INNOVATION COUNCIL

CERTIFICATE OF COMPLETION

PRESENTED TO
DR.MANIKANDAN T
FOR SUCCESSFUL COMPLETION OF
Industry 4.0 FDP

In appreciation of your hard work & continuous improvement that led to
the completion of the coursework on 03 November 2022

Program Director : SARANGARAJAN V

Certificate UID : 4trov9zm8b3u75qg

SKILL & LINC



HIGHLIGHTS OF 2022-2023

