



Department of Aeronautical Engineering

2023-24

EMPYREAN



CONFIDENCE AND COMPETENCE

DEPARTMENT OF AERONAUTICAL ENGINEERING
GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

BASAVANAGAR, 181/1, 182/1, SEETHARAMPALYA - HOODI ROAD,
BEHIND SAP LABS, HOODI, BENGALURU, KARNATAKA 560048





"THE DESIRE TO FLY IS AN IDEA HANDED DOWN TO US BY OUR ANCESTORS WHO, IN THEIR GRUELING TRAVELS ACROSS TRACKLESS LANDS IN PREHISTORIC TIMES, LOOKED ENVIOUSLY ON THE BIRDS SOARING FREELY THROUGH SPACE, AT FULL SPEED, ABOVE ALL OBSTACLES, ON THE INFINITE HIGHWAY OF THE AIR."

— WILBUR WRIGHT,

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ABOUT THE DEPARTMENT

The Department of Aeronautical Engineering was established in the Academic Year 2019-20 as the fifth department of the Gopalan College of Engineering and Management, Bangalore which is approved by AICTE, affiliated to VTU, recognized by UGC and Govt. of Karnataka, and accredited to NAAC. The department offers undergraduate course in Aeronautical Engineering with an intake of 60 students. It is a four-year, eight-semester course. The faculty is a mix of young, dynamic, and experienced from reputed institutions.

The department's main aim is to impart quality education in Aeronautical Engineering and to create engineers of excellence with a high level of competence. The focus is to provide a holistic campus education that would expose students to On-Campus Training, Undergraduate Research and Industrial Internships apart from the Technologically Equipped Classrooms and Modern Laboratories.

The standard laboratories like Wind Tunnel Facility, Propulsion Test Facility, Aerostructures Lab, Avionics Lab, Drawing Lab and Flight Experimentation Lab are established. This is done keeping in view, the advancements for the students' work on applied research problems. The emphasis is placed on Group Discussions, Undergraduate Research, and Assignments.

The department is adopting Modern Teaching Methods that are more inclusive. Technologies like Webinars, Virtual Lab Rooms, Tele-Lectures from Experts, and tools like Smart Interactive Screens, and Quizzing Gadgets are inculcated in the department.

The department's activities are being guided by the Advisory Committee whose members are eminent personalities from Industries, Government Organizations, and R&D Sectors. The initiative of the Gopalan Research, Innovation, and Training Center (GRIT) in the department with UAV - centric interdisciplinary research provides a good opportunity for the undergraduate students.

The Gopalan Aerospace India Private Limited, Hoskote, Bangalore being part of our management provides a better ecosystem for Aeronautical Engineering Department. The institution located close to many leading Aeronautical Industries, Laboratories, and IT Industries will enter into strategic collaborations for the benefit of students.

VISION

Strive and achieve to shape and bring out highly competent and confident Aeronautical Engineers with high ethical values and professional commitment to meet the national and global requirement of industry and society.

MISSION

1. Imparting quality education leading to strong foundation in various fields of Aeronautical Engineering.
2. Through constant up gradation of teaching methods, tools and facilities, make them competent, confident to carry out research to face the rapidly advancing technological world.
3. To mould them as citizens of high moral, social and ethical values to fulfill their obligations.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

- **PEO 1:** Gain competence and confidence to handle problems in theoretical and experimental aspects of various domains of aeronautical engineering.
- **PEO 2:** Involve themselves in domain specific and inter disciplinary research in aeronautical engineering projects considering innovation in design, functionality safety, cost effectiveness and life cycle.
- **PEO 3:** Able to function with a sense of professional and ethical responsibilities to exhibit good competency in their work culture.

PROGRAM SPECIFIC OUTCOMES (PSOS)

- **PSO 1:** Apply their knowledge in the domain areas of Aerodynamics, Aircraft Propulsion, Aircraft Structures and Flight mechanics by acquiring knowledge in basic engineering, mathematics, science and Aeronautical engineering.
- **PSO 2:** Graduates will exhibit professionalism, team work in their chosen profession and adapt to current trends, technologies, research and industrial scenarios by pursuing lifelong learning.

MESSAGE FROM THE HEAD OF THE DEPARTMENT

Aeronautics is a fascinating engineering subject that let students to undertake studies related to aircraft design, development, testing and analysis. As like any other field the various developments in the areas of materials, manufacturing, embedded electronics and computer software play a significant part here and the role of any institution is to provide a multidisciplinary training to the students to stay relevant with the industrial needs and current technologies.

The UG program under the VTU, Belgaum is handled by a mix of well qualified and experienced seniors and passionate young and dynamic young faculties. The course focus on areas like aerodynamics, aircraft materials and structures, propulsion, aircraft systems, controls and instruments. The standard laboratories like wind tunnel facility, propulsion test facility, Aero structures, Avionics lab flight experimentation lab are established, keeping in view of the advancements and also enable the students to take up applied research problems using these test facilities.

The Department vision is related to the developing competent and confident Aeronautical engineers with high ethical values to cater for the needs of Industry and society. Towards achieving this, the department is committed to impart quality teaching and guiding the students with the right mix of theory with strong foundation and practical skill sets to meet the current industrial needs. Students also will be encouraged to pursue inter disciplinary research at undergraduate level with the establishment of UAV Lab. Students are encouraged to take up applied research in collaborative mode as the college is partnering with industries under MOUs. Lectures and seminars from eminent scientists and engineers are periodically arranged to motivate students. The institution located close to many leading aeronautical industries, laboratories and IT industries and is entering into strategic collaborations to benefit the students through in house and internship program A number of Industrial visits are arranged. Students are also encouraged to build aircraft models through Aero-modelling Club activities. While the opportunities for the students for higher studies and placement in the western world need not be over stated the Indian scenario is turning to better with opening of strategic sector manufacturing to private enterprises and a number startup in the area of unmanned aerial system.

Students are nurtured to evolve themselves as best professionals or researchers or entrepreneurs driven by their passion. I am confident that with the highly talented and committed group of staff, advanced Laboratories and highly supportive management students from our institution will come out with high level of professional competence to meet the growing challenges. I wish the students all the very best in all their endeavors.

DR. G PURUSHOTHAM

Prof-HOD, DEPARTMENT OF
AERONAUTICAL ENGINEERING
GOPALAN COLLEGE OF
ENGINEERING AND MANAGEMENT



ACADEMIC BEST PRACTICES

1. USE OF ACADEMIC RECORD TO ENHANCE TEACHING ABILITY

Objective of the practice:

- Objective of this practice is to bring in discipline and structure in teaching methodology thereby enhancing the overall quality of teaching-learning experience

The practice

- GCEM has designed a strategic Academic Record where all the teaching-learning processes and other activities are recorded.
- The Academic record primarily is dedicated to the curriculum, its planning, scrutiny, delivery, internal assessments, results, attendance, etc. Every semester a new academic record is maintained by the faculty which has the faculty member's individual timetable, details of the courses being handled and other basic details. The faculty also documents the Vision, Mission, Program Outcomes (PO's) and Program Specific Outcomes (PSO's) of the department.
- At the beginning of the semester, based on the course allotted and the Calendar of Events, the faculty prepares a detailed course plan (number of sessions to be handled, internal tests, revision and so). The faculty also records the prerequisite for the course and redefines the Course Outcomes (CO's) in line with that defined by the university.
- The record has stipulated formats to map the CO's with that of the PO's and PSO's. The textbooks and reference books detail are also maintained.

Evidence of success:

- Academic record is strictly followed at GCEM which has yielded good success. The Principal and the HODs are able to call for the academic records and check the progress of the academic process by scrutinizing it. Proper and timely updating of academic record ensures proper adherence to the stated academic procedures.

2. STUDENT COUNSELLING:

- Once the students weakness is found. He / She is assigned to a counsellor .
- The personal Counsellor provides assistance and guidance to the students.
- these can be in career aspirations , choice of stream and specializations as well as selection of university as per their interests and preferences.

Benefits of counselling

- It helps you in realizing your passion and the things you are good at.
- It develops confidence and assists you in making informed decisions.
- It helps you foresee the challenges that are likely to come in your way and lets you prepare for that in advance.
- It gives an opportunity to improve behaviour by helping you pick out the negative traits.

PILLARS OF THE DEPARTMENT



DR. G RAMESH

DESIGNATION: RESEARCH DEAN & PROFESSOR

AREAS OF INTEREST

- WIND TUNNEL TESTING
- MICRO AIR VEHICLE
- LOW REYNOLDS NUMBER AERODYNAMICS
- ADVANCED FLOW DIAGNOSTICS
- FLOW CONTROL



DR. G PURUSHOTHAM

DESIGNATION: PROFESSOR & HOD
AREAS OF INTEREST

- ADVANCED COMPOSITE MATERIALS
- ADVANCED MANUFACTURING PROCESS
- METROLOGY & MEASUREMENT



DR. MANJUNATH S V

DESIGNATION: ASSISTANT PROFESSOR
AREAS OF INTEREST

- AIRCRAFT PROPULSION SYSTEMS
- ROCKETS AND MISSILES
- THERMAL SCIENCE ENGINEERING
- MATERIAL SCIENCE
- ADVANCED MANUFACTURING PROCESS
- CADD AND CAE



DR. SIRIKONDAMALLIK K.

DESIGNATION: ASSISTANT PROFESSOR

AREAS OF INTEREST

- STRENGTH OF MATERIALS
- ADVANCED MATERIALS
- CAD/CAM



MR. SAVIRAJ A S

DESIGNATION: ASSISTANT PROFESSOR

AREAS OF INTEREST

- AIRCRAFT STRUCTURES
- SOLID MECHANICS
- ADVANCED VIBRATIONS
- THEORY OF ELASTICITY



MR SUPRITH M

DESIGNATION: ASSISTANT PROFESSOR
AREAS OF INTEREST

- AEROSPACE STRUCTURES
- BIO COMPOSITE MATERIAL
- PRODUCT DESIGN AND DEVELOPMENT
- KINEMATICS
- MULTI-BODY DYNAMICS
- AEROELASTICITY



MR LIKHITH RAJ R

DESIGNATION: ASSISTANT PROFESSOR

AREAS OF INTEREST

- GAS TURBINE TECHNOLOGY
- COMBUSTION TECHNOLOGY
- CAAD AND CFD (FLUENT)



MR SIVARAMRAJ M

DESIGNATION: ASSISTANT PROFESSOR

AREAS OF INTEREST

- CAD/CAE
- ORGANIC COMPOSITE MATERIALS

DEPARTMENT ACTIVITIES

NIO FIESTA - FRESHERS DAY

3RD FEB 2023

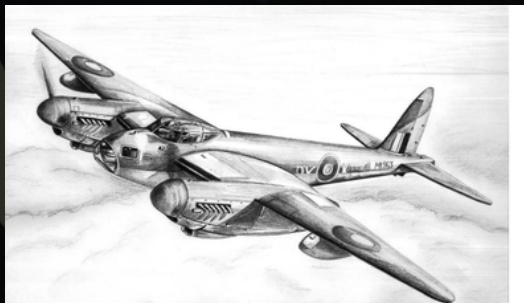


The Aeronautical Engineering Department celebrated 'Nio Fiesta' on February 3, 2023, welcoming new students at the Freshers' Day event. Held in the seminar hall, the occasion was inaugurated by Principal Dr. Basavaraju C. and attended by Dr. G Purushotham, Head of the Department.

The day featured vibrant cultural performances, including singing, dancing, and skits, providing a platform for freshers to showcase their talents. Games and activities fostered camaraderie, while refreshments encouraged casual interaction. Participants appreciated the department's hospitality and looked forward to becoming part of the community. The event marked a joyful and promising start to their journey in Aeronautical Engineering.

AIRCRAFT SKETCHING

4TH FEB 2023



In February 2023, the Aeronautical Engineering Department organized a national-level online competition on "Aircraft Sketching" for Pre-University students. The event encouraged creativity and technical skills in aircraft design. Participants submitted sketches online, followed by presentations in two rounds. Each sketch included a brief description of the design and its features.

THE YOUNG ENGINEER'S

24TH APR 2023 - 29TH APR 2023



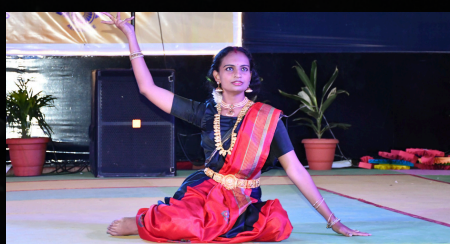
The Young Engineers - Camp 2023, hosted by the Aeronautical Engineering Department's Skill Lab from April 24 to 29, successfully introduced 5th to 9th standard students from Gopalan International School to aeronautics. Led by experts like Dr. G. Ramesh and Prof. R. Jini Raj, the camp combined theoretical sessions on aerodynamics, aeronautics, and rocket science with hands-on activities such as crafting paper planes and building rubber band-powered gliders. The camp effectively ignited students' curiosity and passion for engineering, providing a well-rounded introduction to aviation concepts.

DEPARTMENT ACTIVITIES

GOAERO 2K23

A NATIONAL LEVEL INTERCOLLEGIATE AERO TECHNO-CULTURAL FEST

APRIL 10 & 11, 2023



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management (GCEM) collaborated with Aero Innovation & Skill Centre of the Aeronautical Society of India – Bangalore Branch to organize GOAERO 2K23, a National Level Intercollegiate Aero Techno-Cultural Fest on 10th and 11th April, 2023. The event was supported by Gopalan Aerospace, Bumblebee, Spranktronics, Vinayaka Energy Tek, Edall Systems, INDLAB Equipment's, New Tech Engineers, Captronic Systems, and Aeolus Aerotech. The event witnessed the participation of over 300 students from 36 Engineering colleges hailing from 10 states of the country. Eminent personalities, including researchers, academicians, and technocrats in the Aerospace domain, graced the occasion with their presence and delivered technical talks.

The two-day tech fest GOAERO 2K23, held on April 10–11, 2023, began with an inaugural ceremony featuring Dr. S V Ramana Murty, Director of GTRE (DRDO), as the Chief Guest. He delivered a keynote on advanced aero gas turbine engines, emphasizing the need for cutting-edge technology. Prof. S N Omkar from IISc, the Guest of Honor, spoke on drone computing and its diverse applications. Dr. C Prabhakar, General Secretary of Gopalan Foundation, and other dignitaries shared insights on aerospace advancements and the role of GTRE.

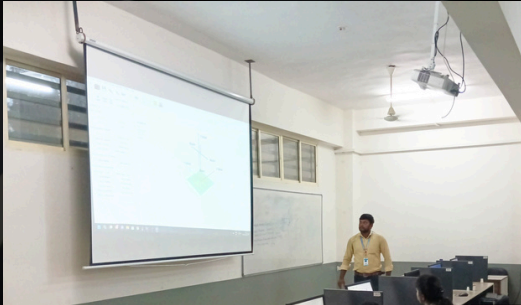
The event included technical competitions such as a quiz, ideathon, paper presentation, 3D modeling, and more, with active participation from students across various colleges. A seminar series on April 11 featured talks from aerospace experts, including Mr. Harsha R from Boeing, Wg. Cdr. Gopakumar B R (Retd.), and Mr. Prakash Rao from ISRO. Topics ranged from aerospace industry trends to flight testing and space technology.

Cultural events like treasure hunts, dance performances, and a fashion show followed, culminating in a valedictory ceremony where Gopalan School of Architecture & Planning was declared the overall champion. The fest concluded with a flash mob and DJ night. The organizers expressed gratitude to the management and principal for the opportunity to host the event.

DEPARTMENT ACTIVITIES

SKILL ENHANCEMENT PROGRAM

17TH MAY 2023 - 2ND JUNE 2023



The Skill Enhancement Program, held from May 17 to June 2, 2023, by the Aeronautical Engineering Department's Skill Lab, provided hands-on training in key engineering software. Students learned 3D modeling and simulations using CATIA and SOLIDWORKS, explored airfoil design with XFLR5 and JAVA FOIL, and gained expertise in wind turbine analysis through QBLADE. They also developed practical skills in fluid flow simulations using ANSYS FLUENT and numerical computing with MATLAB. Through workshops and projects, the program equipped participants with essential skills for engineering and design careers.

FAREWELL FUNCTION FOR OUTGOING STUDENTS - BATCH 2019-23

27TH MAY 2023



The Farewell Function for the outgoing batch of 2019-2023 was held on May 27, 2023, by the Aeronautical Engineering Department. The event celebrated the achievements of the graduating students and marked their transition to the next phase of their careers. Faculty members and peers shared heartfelt speeches, reflecting on memorable moments and the growth of the students throughout their journey. The program included cultural performances, showcasing the talents of the students, and concluded with a formal vote of thanks. The farewell served as a poignant send-off, fostering a sense of unity and nostalgia among the graduating class.

ADVANCED VIBRATION ANALYSIS

16TH JUNE 2023



On June 16, 2023, the Aeronautical Engineering Department at Gopalan College of Engineering and Management hosted a workshop on Advanced Vibration Analysis in collaboration with Enmaz Engineering Services Pvt. Ltd. Keynote speakers Dr. V. Shankar and Mr. D.S. Ramakrishna discussed vibration testing fundamentals and its industry applications. Participants also engaged in hands-on sessions conducting experimental vibration analysis on aircraft structures, gaining valuable insights and networking opportunities for their professional development.

DEPARTMENT ACTIVITIES

TWO DAYS WORKSHOP ON AEROMODELING RC AIRCRAFT TO THE STUDENTS OF VELLORE INSTITUTE OF TECHNOLOGY, BHOPAL

OCTOBER 3 & 4, 2023



A two-day workshop on Aeromodelling RC Aircraft was conducted for students of Vellore Institute of Technology, Bhopal, on October 3 and 4, 2023. The workshop provided hands-on training in designing, building, and flying radio-controlled aircraft. Participants learned about aerodynamics, materials, and construction techniques, followed by practical sessions where they constructed and tested their own RC aircraft. The event aimed to enhance students' understanding of aeronautics and foster their passion for aeromodeling.

IGNITING MINDS

A TRIBUTE TO DR. APJ ABDUL KALAM ON HIS 92ND BIRTH ANNIVERSARY

OCTOBER 15 TO 17, 2023



"Igniting Minds: A Tribute to Dr. APJ Abdul Kalam" was held from October 15 to 17, 2023, to celebrate the 92nd birth anniversary of the renowned scientist and former President of India. The event featured a series of talks, workshops, and interactive sessions, focusing on Dr. Kalam's vision for education, innovation, and nation-building. Esteemed speakers shared insights on his contributions to science and technology, inspiring students to embrace his legacy. Activities included competitions and exhibitions, encouraging participants to explore their creativity and passion for knowledge, fostering a spirit of innovation in line with Dr. Kalam's teachings.

AYUDHA POOJA CELEBRATION

OCTOBER 21, 2023

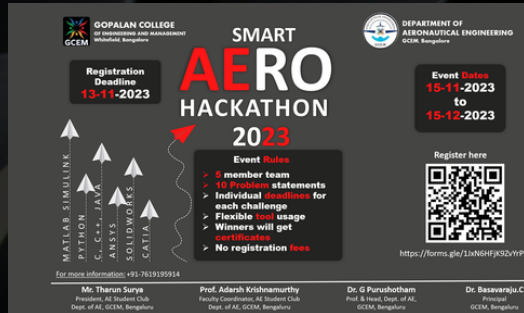


The Ayudha Pooja celebration was held on October 21, 2023, at the Gopalan College of Engineering and Management. This auspicious event, part of the Dussehra festivities, involved rituals to honor tools, machinery, and instruments used in various fields. Students and faculty participated in the pooja, offering prayers for prosperity and success in their academic and professional pursuits. The celebration fostered a sense of community and gratitude, allowing everyone to reflect on the significance of the tools that aid in their education and work.

DEPARTMENT ACTIVITIES

SMART AERO HACKATHON 2023

15TH NOVEMBER 2023 TO 15TH DECEMBER 2023



GOPALAN COLLEGE
OF ENGINEERING AND MANAGEMENT
Whitefield, Bangalore

SMART AERO HACKATHON 2023

Registration Deadline: 13-11-2023

Event Dates: 15-11-2023 to 15-12-2023

Register here: <https://forms.gle/1dNHGFKSDVHPS>

Event Rules:

- 5 member team
- 15 problem statements for each challenge
- Individual solutions
- Flexible tool usage
- Winners will get certificates
- No registration fees

For more information: +91-7619199934

Mr. Thanun Surya
President, AI Student Club
Dept. of AE, GCEM, Bangalore

Prof. Adarsh Krishnamurthy
Faculty Coordinator, AI Student Club
Dept. of AE, GCEM, Bangalore

Dr. G. Purushotham
Prof. & Head, Dept. of AE,
GCEM, Bangalore

Dr. Basavaraju C
Principal
GCEM, Bangalore

The Department of Aeronautical Engineering is organizing the "Smart Aero Hackathon 2023," a month-long national-level event from November 15 to December 15, 2023, for engineering students across the country. The hackathon aims to enable participants to apply their skills in MATLAB, Python, CATIA, and ANSYS to real-world aeronautical challenges while promoting teamwork and creative problem-solving. Teams will develop innovative solutions to advance aerospace technology, gain practical experience, and earn certificates to enhance their portfolios.

4-WEEK INTERNSHIP PROGRAM

25TH OCTOBER - 24TH NOVEMBER 2023



GOPALAN COLLEGE
OF ENGINEERING AND MANAGEMENT
Whitefield, Bangalore

DEPARTMENT OF AERONAUTICAL ENGINEERING

INTERNSHIP PROGRAM
on MATLAB, SIMULINK, PYTHON

25 OCT - 24 NOV 2023

MATLAB & SIMULINK

python SOFTWARE FOUNDATION

PROF. ADARSH KRISHNAMURTHY

The Department of Aeronautical Engineering organized a 4-week offline internship program on "MATLAB, Simulink, Python, Solidworks, and Ansys" for third-year students from October 25 to November 24, 2023. Led by Prof. Adarsh Krishnamurthy, the program provided hands-on experience with essential engineering tools, enhancing students' skills for the aerospace industry. Participants gained proficiency in MATLAB and Simulink for data analysis and simulation, as well as in Python for various engineering applications. Professors Suprith and Likhith Raj also contributed by teaching Solidworks and Ansys. This comprehensive training not only equips students with valuable expertise but also enhances their marketability and career opportunities in aeronautical engineering.

PARENTS-TEACHERS MEETING

NOVEMBER 11, 2023



The Department of Aeronautical Engineering organized a Parents-Teachers Meeting for final-year students on November 11th. The meeting aimed to strengthen the collaboration between parents and faculty in supporting students' academic and personal development. Faculty members provided insights into the students' progress, discussed their achievements, and addressed any concerns regarding their final year curriculum and projects. Parents had the opportunity to engage with teachers, ask questions, and share their observations, fostering a supportive community focused on student success as they prepare to transition into their professional careers.

DEPARTMENT ACTIVITIES

KANNADA RAJYOTHSAVA

NOVEMBER 18TH, 2023



The Department of Aeronautical Engineering celebrated Karnataka Rajyotsava on November 1, 2023, with great enthusiasm. The event honored the formation of the state of Karnataka and showcased the rich cultural heritage of the region. Students participated in various cultural performances, including traditional dances, music, and skits, reflecting the vibrant spirit of Karnataka. The celebration fostered a sense of pride and unity among the participants, highlighting the importance of preserving and promoting the state's cultural legacy. The event concluded with a speech on the significance of Karnataka Rajyotsava, inspiring students to contribute to the state's progress and development.

FACULTY ENRICHMENT PROGRAM

27TH NOVEMBER 2023



The Department of Aeronautical Engineering extends its heartfelt gratitude to all the professors for contributing to the success of the Faculty Enrichment Program on "Use of LabVIEW for Aeronautical and Aerospace Research." Special thanks go to Mr. Manimaran A, Assistant Manager at VI Solutions, for his insightful presentation on LabVIEW's diverse applications in research. His expertise provided valuable insights, enhancing the faculty's understanding of the software's transformative capabilities. The event also facilitated a deep dive into the role of sensors in aerospace and defense, fostering a collaborative atmosphere for innovation and research advancement.

MOLD & BUILD

NOVEMBER 18TH, 2023



The Department of Aeronautical Engineering has organized a two-day hands-on workshop on composite fabrication for students of GCEM and other engineering colleges. Led by experts including Dr. Rama Chandra C G from Presidency University, Mr. Prasanth from NextLeap Aeronautics, and Dr. G Purushotham from GCEM, the workshop will focus on the fabrication and application of composite materials. Attendees will learn about different types of composites such as Polymer Matrix, Metal Matrix, and Ceramic Matrix Composites, and gain practical skills in their fabrication, fostering innovation and broadening their industrial applications.

DEPARTMENT ACTIVITIES

INAUGURATION OF EAGLE & ENVICTUS

DECEMBER 9, 2023



The inauguration of EAGLE (AE Students' Association) and ENVICTUS (AE Students' Club) was held on December 9, 2023, marking a significant event for the Aeronautical Engineering department. The ceremony included the unveiling of names and logos, an investiture for office bearers led by Dr. G. Purushotham, and speeches from faculty advisors and dignitaries. Dr. C M Bhaskara Reddy, CEO of Gopalan Institutions, delivered the presidential address, emphasizing holistic education and character development.

ESPERANZA 2K24

DECEMBER 9, 2023



The Department of Aeronautical Engineering hosted Freshers' Day, "ESPERANZA 2023," to warmly welcome the 2nd-year students into the department. The celebration was a vibrant showcase of talent and camaraderie, featuring a range of cultural events organized by the 3rd and final-year students. Activities included dance performances, music, and skits, creating an engaging atmosphere that encouraged interaction and bonding among students. The initiative highlighted the collaborative spirit of the department, with senior students taking the lead in organizing and facilitating the celebrations, ensuring a memorable experience for all attendees.

BOEING IIT NATIONAL AEROMODELLING, HOVERCRAFT, FLIGHT CHALLENGE 2024 POWERED BY AIRBUS SHAASTRA, IIT MADRAS

JANUARY 3 TO 7, 2024



Students from the Department of Aeronautical Engineering participated in the Boeing IIT National Aeromodelling, Hovercraft, and Flight Challenge 2024, powered by Airbus, held at Shaastra, IIT Madras, from January 3rd to 7th, 2024. This event provided our students with an excellent opportunity to showcase their skills in aeromodelling and hovercraft design, while engaging with industry experts and gaining valuable insights into aerospace technology. Their participation fostered innovation and teamwork, as they competed for awards in various challenges, highlighting the department's commitment to excellence in engineering education.

DEPARTMENT ACTIVITIES

ARDUINO WORKSHOP

13TH JANUARY 2024



GCEM's 3rd-semester aeronautical students participated in an engaging Arduino workshop that focused on cutting-edge technology. Dr. Ramesh Gopalan, Professor and Dean of Research, delivered the keynote address, while hands-on sessions were led by Mr. Gagan Devaraj and Mr. S. Karan from EAGLE. Participants explored coding basics and advanced applications of microcontrollers, sparking innovative ideas and fostering a culture of creativity in the aerospace community. This workshop equipped students with valuable Arduino skills, positioning them as future-ready engineers in the field.

RC AEROMODELLING WORKSHOP

16TH JANUARY 2024



GCEM Aeronautical's 3rd-semester students recently participated in an exciting RC Modeling Workshop. The hands-on session was guided by Mr. Tharun Surya DJ, President of ENVICTUS, along with ENVICTUS members Mr. Varun Reddy and Mr. Gagan Devaraj. Participants explored the intricacies of remote control aircraft design, mastering aeronautical modeling. This event was not only about flying; it offered a deep dive into hands-on engineering. GCEM continues to nurture future aviators, equipping them with essential skills for the aerospace industry. At GCEM Aeronautical, the skies are not the limit—they're a canvas for creativity!

A WORKSHOP ON OPEN VSP

27TH JANUARY 2024



The Department of Aeronautical Engineering, in collaboration with GRIT, organized an "OPEN VSP" workshop on January 27, 2024. Dr. Ramesh Gopalan delivered the keynote, while Dr. Sirikondamalik and III-year students, Mr. Gowtham Y V, Mr. Shekar, and Ms. Kiran Kumari Bhatt, led the hands-on session. Participants learned to use NASA's Open VSP tool for designing aircraft geometry through interactive lessons and practical exercises. Dr. G. Purushotham thanked the organizers and encouraged students to apply these skills to their academic projects and startups.

DEPARTMENT ACTIVITIES

RADIANCE: CELEBRATING NATIONAL SCIENCE DAY

FEBRUARY 28, 2024



"Radiance: Celebration of National Science Day" on February 28, 2024, organized by the Department of Aeronautical Engineering at Gopalan College of Engineering and Management, commemorated the discovery of the Raman Effect by Sir C. V. Raman. The event was graced by Dr. P V Venkitakrishnan Venkitachalam, Retd. Distinguished Scientist, Former Director at ISRO, and Honorary Professor at Nitte Meenakshi Institute of Technology, as the Chief Guest. He delivered an inspiring technical talk on "Space Technology for National Development," highlighting the impact of space technology on India's progress.

FAREWELL 2K24

24TH MAY, 2024



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management (GCEM) recently bid a heartfelt farewell to its second batch of final year students. The event was a touching tribute, featuring beautifully edited photos and videos crafted by talented juniors, capturing the memorable journey of their seniors. As they embark on new adventures, we celebrate the friendships forged and the dreams that will take flight. Wishing our graduates success and happiness in their future endeavors!

AVISHKAAR ANNUAL PROJECT EXPO

24TH MAY, 2024



The Gopalan Skill Academy held its annual Project Expo, showcasing the exceptional projects developed by our talented final-year students. The event was a vibrant display of innovation and technical skill, highlighting the hard work and dedication of our future aeronautical engineers. A heartfelt thank you to the esteemed jury from Collins Aerospace for their invaluable insights and support. Their presence and feedback provided immense inspiration to our students.

DEPARTMENT ACTIVITIES

SPARK-TANK 2K24

MAY 28, 2024



On May 28, 2024, the final year students of the Department of Aeronautical Engineering organized "Spark Tank 2k24," a vibrant competition aimed at encouraging innovative startup ideas. The event featured a poster presentation format, allowing participants to showcase their creative concepts and entrepreneurial spirit. This initiative not only fostered a culture of innovation among students but also provided a platform for aspiring entrepreneurs to present their ideas to peers and faculty, promoting collaboration and inspiration within the academic community.

GRADUTION DAY

JUNE 1ST, 2024



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management (GCEM) proudly announces the graduation of the Bachelor of Engineering in Aeronautical Engineering class of 2020-2024. This exceptional cohort has demonstrated remarkable dedication, innovation, and resilience throughout their academic journey. Their hard work and passion for aeronautical engineering have culminated in this significant milestone, paving the way for future contributions to the aerospace industry.

INDUSTRIAL/EDUCATIONAL VISITS

AICTE ACTIVITY PROGRAM AT NANDI HILLS

NOVEMBER 2, 2023



On November 2, 2023, final-year students from the Department of Aeronautical Engineering participated in an AICTE Activity Program held at Nandi Hills. The program aimed to engage students in various activities that fostered teamwork, leadership, and practical learning experiences outside the classroom. This initiative provided students with a valuable opportunity to enhance their skills, network with peers, and gain insights into real-world applications of their academic knowledge in a scenic and inspiring environment.

AN INDUSTRIAL VISIT TO ISTRAC, ISRO, BENGALURU

NOVEMBER 24, 2023



On October 24, 2023, the Department of Aeronautical Engineering organized an industrial visit to ISRO's iSTRAC facility in Bengaluru for second-year students. The visit provided students with a unique opportunity to witness real-time satellite tracking, telemetry, and command operations crucial to ISRO's space missions. Students gained valuable insights into the cutting-edge technologies and systems used in space exploration and satellite communication. This hands-on learning experience broadened their understanding of aerospace engineering, bridging the gap between theoretical knowledge and practical applications in the space industry.

SAADHANA: THE CORPORATE CONCLAVE HOSTED AT HAL MANAGEMENT ACADEMY, BANGALORE

FEBRUARY 2 & 3, 2024



GCEM's Aeronautical Engineering students participated in Saadhana: The Corporate Conclave, held at HAL Management Academy, Bangalore, on February 2 & 3, 2024. This event brought together industry leaders and aspiring engineers to discuss innovations and advancements in the aerospace sector. GCEM students had the opportunity to engage with professionals, gain industry insights, and network with experts, enriching their understanding of corporate dynamics in the field of aerospace. The conclave fostered learning and inspiration, positioning students to excel in their future careers.

INDUSTRIAL/EDUCATIONAL VISITS

INDUSTRIAL VISIT TO GOPALAN AEROSPACE INDIA PVT LTD, BANGALORE

FEBRUARY 6, 2024



The 2nd-year Aeronautical Engineering students of GCEM visited Gopalan Aerospace India Pvt Ltd, Bangalore, on February 6, 2024, for an enriching industrial visit. The visit provided students with valuable insights into aerospace manufacturing and assembly processes, offering a real-world glimpse into the workings of the aerospace industry. Students explored various sections of the facility, gaining hands-on exposure to the intricacies of aircraft components and production techniques, which deepened their practical understanding of aeronautical engineering. This visit bridged academic learning with industrial applications, inspiring students to pursue careers in aerospace.

HERITAGE TOUR TO VISVESVARAYA INDUSTRIAL AND TECHNOLOGICAL MUSEUM, TIPU SULTAN'S SUMMER PALACE, AND CUBBON PARK

FEBRUARY 17, 2024



On February 17th, 2024, the Department of Aeronautical Engineering organized a heritage tour for students to the Visvesvaraya Industrial and Technological Museum, Tipu Sultan's Summer Palace, and Cubbon Park. The tour provided an enriching experience as students explored the museum's exhibits on science and technology, gaining insight into India's industrial advancements. The visit to Tipu Sultan's Summer Palace offered a glimpse into historical architecture, while the scenic Cubbon Park allowed for relaxation and reflection. The tour blended learning with cultural exploration, broadening the students' perspectives on both technology and heritage.

OPEN DAY 2024 AT INDIAN INSTITUTE OF SCIENCE (IISc), BANGALORE

FEBRUARY 24, 2024



The 2nd and 3rd-year Aeronautical Engineering students of GCEM attended the Open Day 2024 at the Indian Institute of Science (IISc), Bangalore, on February 24, 2024. The event offered students a unique opportunity to explore cutting-edge research and innovation across various fields of science and engineering. They witnessed live demonstrations, interacted with IISc researchers, and gained insights into the latest advancements in aerodynamics, propulsion, and aerospace technologies. This exposure to pioneering research fueled the students' passion for aerospace, inspiring them to explore new frontiers in their academic journey.

INDUSTRIAL/EDUCATIONAL VISITS

NO TOBACCO DAY

31ST MAY, 2024



On No Tobacco Day, 2nd and 3rd-year students from the Department of Aeronautical Engineering at Gopalan College of Engineering and Management (GCEM) united with Aster Hospital and the Bangalore Traffic Police in Whitefield to promote a tobacco-free lifestyle. The event featured informative sessions that educated peers about the health risks of tobacco, including its impact on respiratory and cardiovascular health.

Students engaged the community through pamphlet distribution and street campaigns, advocating for a healthier environment. This initiative reflects GCEM's commitment to instilling values of responsibility and leadership in its students. We commend their efforts in making a positive impact on public health!

INDUSTRIAL VISIT TO ISRO -U R RAO SATELLITE CENTRE

JUNE 18, 2024



The Department of Aeronautical Engineering at GCEM organized an industrial visit to ISRO's U R Rao Satellite Centre on June 18th, 2024. Final year and 3rd-year students had the opportunity to explore the cutting-edge satellite technologies and gain insights into India's space missions. This visit provided valuable exposure to real-world aerospace applications, enriching their academic journey and inspiring future careers in the aerospace sector.

INTER-INSTITUTION INTERACTION

JULY 18TH, 2024



On July 18, 2024, our 4th and 6th-semester Aeronautical Engineering students from Gopalan College of Engineering and Management (GCEM) had an enriching visit to Acharya Institute of Technology, Bengaluru. During this visit, students explored advanced flight simulators and laboratory facilities while attending insightful presentations on various student projects. The extensive interactions with Acharya professors fostered a spirit of collaboration and opened doors for future research opportunities, particularly in aircraft systems development and joint campus placements. This experience not only broadened our students' horizons but also strengthened the bonds between our institutions.

DEPARTMENT ACHIEVEMENT'S

4TH SEMESTER AERONAUTICAL ENGINEERING VTU TOPPERS 2024



REVATHI NAGENDRA

1GD22AE016



PREETI V

1GD22AE014



KARANAM VAISHNAVI

1GD22AE008



3RD SEMESTER AERONAUTICAL ENGINEERING VTU TOPPERS 2024



REVATHI NAGENDRA

1GD22AE016



KARANAM VAISHNAVI

1GD22AE008



PREETI V

1GD22AE014



DEPARTMENT ACHIEVEMENT'S

KSCST FUNDED PROJECTS

Sl. No.	PROPOSAL REFERENCE NO.	PROJECT TITLE	COURSE	BRANCH	NAME OF THE GUIDE(S)	NAME OF THE STUDENT(S)	AMOUNT SANCTIONED (RS.)
534	47S_BE_0455	DESIGN, DEVELOP, AND TESTING A HYBRID QUADCOPTER-ROVER (DROVER) FOR RESCUE OPERATIONS, DISASTER MANAGEMENT, AND INDUSTRIAL SURVEILLANCE	B.E.	AERONAUTICAL ENGINEERING	MR. RAJASHEKHARA REDDY H. G.	MR. VADAKKERKARA RAMESH ROOPESH, Ms. SHAESTA TARANUM	8,500.00
535	47S_BE_0519	DESIGN AND FABRICATION OF MODULAR ELECTRIC PROPULSION SYSTEM FOR UAV'S.	B.E.	AERONAUTICAL ENGINEERING	PROF. SUPRITH M.	MR. SKANDA NAVADA, MR. RISHITH K, MR. S. KARAN, MR. THARUN SURYA D. J.	7,000.00
536	47S_BE_2767	DESIGN AND DEVELOPMENT OF 3DOF TESTING MECHANISM FOR UAV	B.E.	AERONAUTICAL ENGINEERING	MR. ADARSH KRISHNAMURTHY	MR. GAGAN D., Ms. HEMASHREE D. S., MR. SYED SULTHAN K., MR. VARUN REDDY	7,000.00
537	47S_BE_4217	DESIGN AND DEVELOPMENT OF ROBUST ICOSAHDREDON FRAME CAPABLE OF ABSORBING AND DISSIPATING COLLISION FORCES, MINIMISING THE RISK OF CRITICAL DAMAGE TO UNMANNED AERIAL SYSTEM	B.E.	AERONAUTICAL ENGINEERING	DR. MANJUNATH S. V.	MR. M. P. THASHWAN SARATHI, Ms. AMRUTHA M., Ms. SAHANA GHORPADE, Ms. VARSHINI A. R.	9,500.00

DEPARTMENT ACHIEVEMENT'S

KSCST BEST PROJECT OF YEAR 2024



**KSCST 47 SERIES BEST PROJECT
OF THE YEAR 2023-24**

WE ARE DELIGHTED TO ANNOUNCE THAT OUR TEAM FROM THE AERONAUTICAL ENGINEERING DEPARTMENT AT GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT HAS WON THE BEST PROJECT AWARD OF THE YEAR AT THE 47TH SERIES OF THE STUDENT PROJECTS PROGRAMME - STATE LEVEL ANNUAL EXHIBITION! THIS REMARKABLE ACHIEVEMENT SHOWCASES THE HARD WORK, DEDICATION, AND INNOVATIVE SPIRIT OF OUR STUDENTS. WE TAKE IMMENSE PRIDE IN REPRESENTING OUR COLLEGE AND BRINGING THIS HONOR BACK TO OUR DEPARTMENT. A HEARTFELT THANK YOU TO EVERYONE WHO SUPPORTED AND BELIEVED IN US THROUGHOUT THIS JOURNEY! TOGETHER, WE SOAR TO NEW HEIGHTS!

40 MINI



SECURED TOP 5 IN NATIONAL AEROSPACE DESIGN COMPETITION



**TOP-5 IN NATIONAL LEVEL NACDEC-VII 2023-24
WITH 25000/- CASHPRIZE**

WE ARE PROUD TO ANNOUNCE THAT OUR TEAM FROM THE AERONAUTICAL ENGINEERING DEPARTMENT AT GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT HAS SECURED A SPOT IN THE TOP 5 FINALISTS OF THE PRESTIGIOUS NACDEC VII COMPETITION. THIS ACHIEVEMENT REFLECTS OUR COMMITMENT TO INNOVATION, TEAMWORK, AND EXCELLENCE IN AERONAUTICAL ENGINEERING. WE EXTEND OUR GRATITUDE TO OUR MENTORS AND SUPPORTERS WHO HAVE GUIDED US ON THIS JOURNEY. TOGETHER, WE ARE EAGER TO SHOWCASE OUR PROJECT AND CONTRIBUTE TO THE FUTURE OF AEROSPACE TECHNOLOGY!

DEPARTMENT ACHIEVEMENT'S

SRISHTI-2024

MAY 24TH -26TH , 2024



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management extends heartfelt congratulations to Kartikkumar Mungali, a 6th-semester student, for securing 1st place at the SRISHTI-2024 state-level project exhibition held at AIT, Hebbal! This remarkable achievement is a testament to Kartikkumar's dedication and innovative spirit, bringing great honor to our department. We are immensely proud of your success and look forward to your future contributions to the field of aeronautical engineering!

OXYIGNITE 2K23

DECEMBER 22, 2023



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management extends heartfelt congratulations to Gowtham Yv, Shekar G C, and Shashank P for securing 2nd position in the 3D Modelling competition at OXYIGNITE-2K23, hosted by The Oxford College of Engineering, Bangalore, on December 22, 2023. Their exceptional skills and creativity in 3D modeling truly represent the talent within our department. Great job, team!

SAADHANA

FEBRUARY 2ND, 2024



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management proudly congratulates Simran Murar and Chaithanya Aradhya for clinching the first prize in the Avdharna (Ideathon) competition during Saadhana - HMA, the corporate conclave held at HAL Management Academy, Bangalore on February 2nd and 3rd, 2024. Their innovative approach and outstanding collaboration showcased the talent and creativity of our students, bringing great pride to our department. Well done, Simran and Chaithanya!

DEPARTMENT ACHIEVEMENT'S

IITM BOEING AEROMODELLING 2024

JANUARY 6, 2024



The Department of Aeronautical Engineering at Gopalan College of Engineering and Management is proud to announce that three teams from Club ENVICTUS have made it to the final round of the IITM & Boeing Aeromodelling Competition! Out of 440 teams from across the country, this remarkable achievement showcases the dedication and talent of our students. We wish them the best of luck in the final round!

IITM AIRBUS FLIGHT CHALLENGE 2024

JANUARY 6, 2024



Club ENVICTUS at Gopalan College of Engineering and Management proudly announces that their team has been selected for the final round of the IITM & Airbus Flight Challenge 2024! Team members Gowtham V Y, Charan R, and Shashank P, mentored by Prof. Adarsh Krishnamurthy, are tackling challenges in sustainable aviation. This competition not only offers significant prizes but also opportunities for collaboration with industry leaders. The journey has enhanced their project's quality and fostered a spirit of innovation, contributing to the future of the aviation industry.

KALAM 92

DECEMBER 6-8, 2023



The Department of Aeronautical Engineering proudly congratulates our 3rd-year students for their stellar achievements at Kalam 92, organized by the Department of Aeronautical Engineering at ACS College of Engineering, Bangalore, from December 6 to 8, 2023. Our students showcased remarkable talent, securing 1st place in Parachute Diving with Suraj Diyali and Rithik P, and 2nd place with Steven P Joel and Kiran Kumari Bhat. Additionally, Kiran Kumari Bhat clinched 1st place in the Paper Plane Event. These accolades highlight the dedication and innovative spirit of our students. Well done!

DEPARTMENT PATENTS

TITLE: "A GIMBAL INSPECTION ASSEMBLY WITH A VIBRATION MITIGATION MODULE"

APPLICATION NUMBER: 202441033781

INVENTORS: DR. RAMESH, DR. PURUSHOTHAM G, MR. SUPRITH M & MR. SAVIRAJ A S

TITLE: "MODULAR ELECTRIC PROPULSION SYSTEM FOR THE UAV'S"

INVENTORS: DR G PURSHOTHAM, MR. SUPRITH M, MR. THARUN SURYA DJ, MR. KARAN S, MR SKANDA NAVADA & MR RISHITH

TITLE: "COGNITIVIE UNMANNED TRACK EXAMINER"

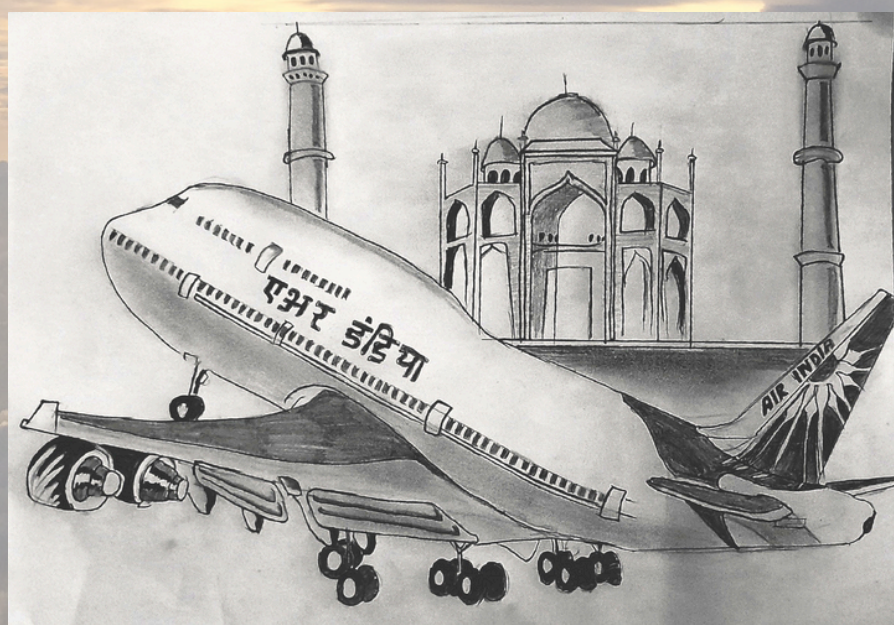
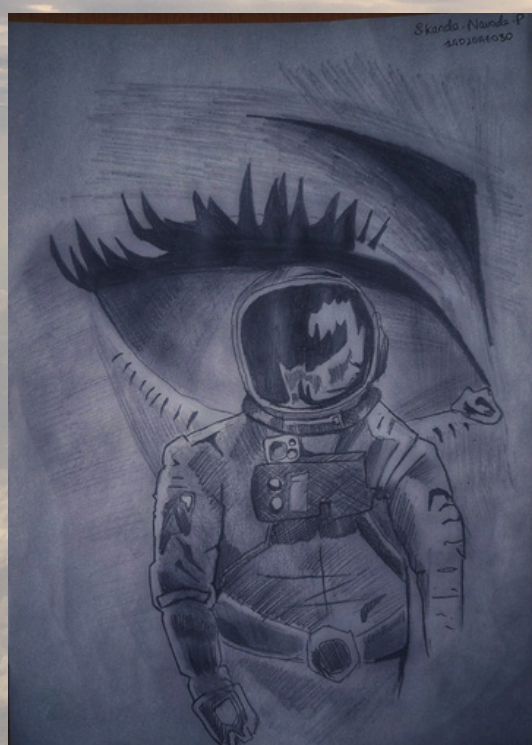
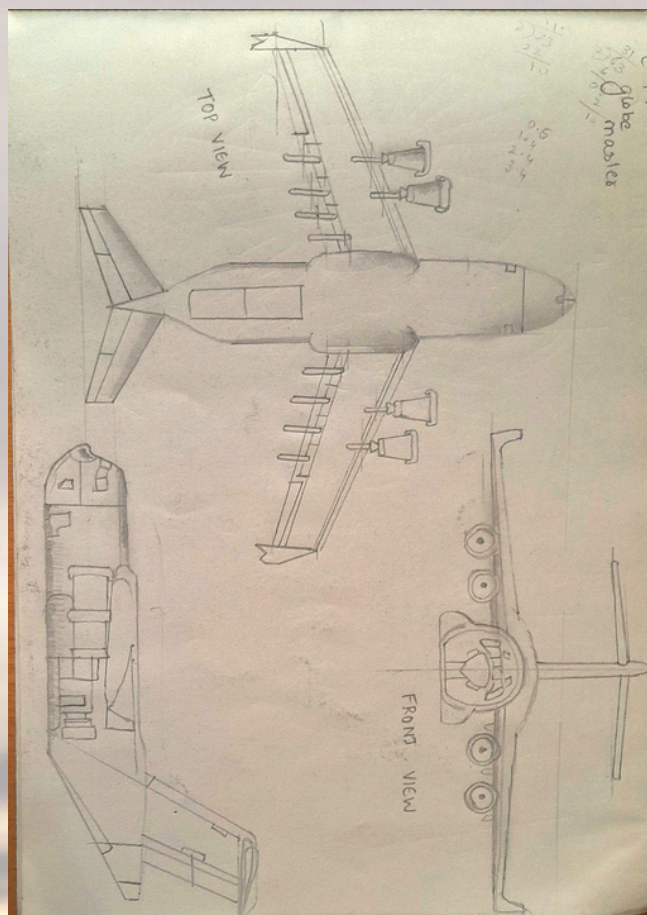
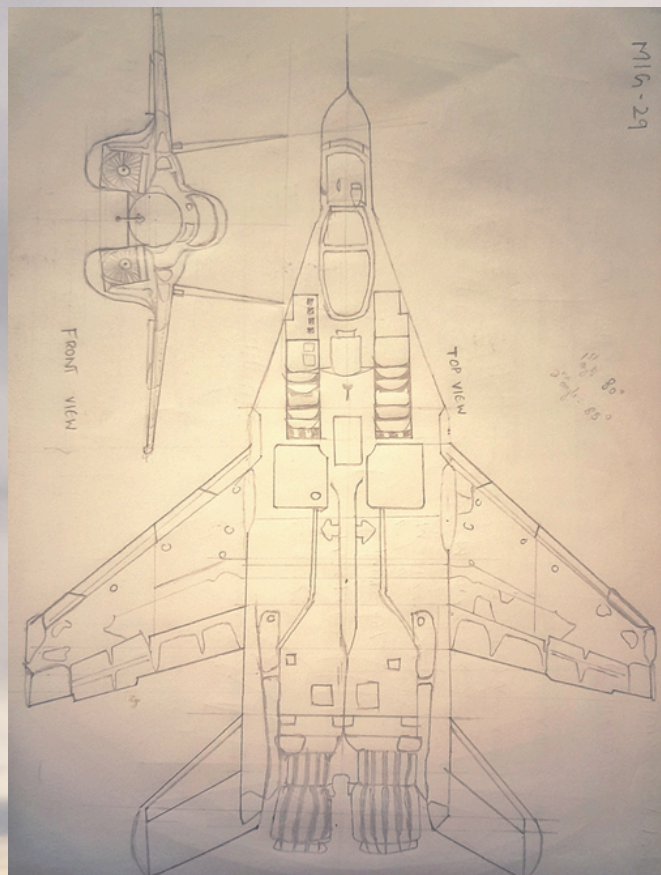
INVENTORS: DR MANJUNATH S V, MR. STEVEN JOEL, MR. ANKITH KUMAR PADHY, MR. SURAJ DIYALI, MR. RITHIK P

TITLE: "MEDIFLY: AN AUTONOMOUS DRONE FOR THE PRECISION DROPPING OF MEDICINES"

INVENTORS: DR MANJUNATH S V, MS. K S HARISHA, MS. MAHESHWARI M, MS. PAVITHRA V, MS. SWATHI O

DEPARTMENT TALENTS

DRAWINGS & POSTERS



**ART BY: SKANDA NAVADA P
IV YEAR, AE**

DEPARTMENT TALENTS

ARTICLES

RAM 15 SWAP

Future of AI

AERONATICLE

<https://www.towerfast.com/press-room/the-future-of-ai-in-aviation>

-S KARAN

AI will be able to use algorithms to predict flight delays and faults with airplanes. As a result, it could allow both airlines and airports a better chance of avoiding serious issues that could disrupt traffic, revenue, and customer satisfaction. Artificial intelligence could soon transform the way that airlines operate and serve customers. It could facilitate faster check-ins and allow customers to handle many of their own flight-related issues like checking in and paying for baggage-related costs. AI also can keep more airlines in the sky and reduce a company's repair and labor costs.

AI In Aviation: Are You Ready To Fly Without A Human Pilot?



AI technology is becoming more advanced and complex, and is finding applications in the aviation industry in multiple ways, including auto-pilot features. Due to factors like cost savings and shortage of qualified pilots, many companies have expressed an interest in reducing or even eliminating the number of pilots in the cockpit. There have been speculations that AI may someday replace human pilots. This article covers the various applications of AI in aviation and discusses how close AI is to replacing human pilots in the future.

WRITTEN BY: S KARAN
IV YEAR, AE

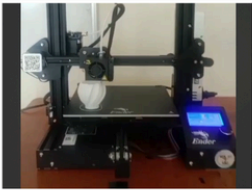
Article The Gopalan Skill Lab: Pioneering Innovation in Aeronautical Engineering

THE GOPALAN SKILL LAB

The Gopalan Skill Lab stands as a beacon of cutting-edge technology and hands-on learning within the Aeronautical Engineering Department. Designed to equip students with practical skills and real-world experience, the lab is a hub of innovation, featuring state-of-the-art equipment such as a 3D printer, flight simulator, avionics lab, and laser engraver.

3D PRINTER

At the heart of modern engineering lies the ability to rapidly prototype and iterate designs, and the 3D printer in the Gopalan Skill Lab is a testament to this. This advanced printer allows students to transform their digital models into physical objects with precision and speed. The 3D printer enables the exploration of innovative design concepts and the testing of their feasibility. Students can learn the intricacies of additive manufacturing, a key technology in the aerospace sector. By using the 3D printer, they gain hands-on experience in material science, design optimization, and rapid prototyping, essential skills for any aspiring aeronautical engineer.



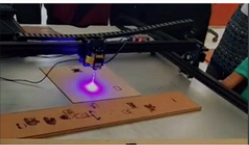
AVIONICS LAB

In the avionics lab, students delve into the electronic systems that are the backbone of modern aircraft. This lab is equipped with advanced instrumentation and simulation tools that cover a wide range of avionics topics, including communication systems, navigation aids, and flight control systems. The hands-on experience in the avionics lab is essential for understanding the complex electronic environments of today's aircraft. Students learn to design, test, and troubleshoot avionics systems, gaining skills that are crucial for ensuring the safety and efficiency of flight operations.

The Gopalan Skill Lab represents a holistic approach to aeronautical education, where advanced technology meets practical learning. Each piece of equipment in the lab serves a specific purpose in nurturing the skills required for the aerospace industry. Together, they create an environment where students can experiment, innovate, and gain hands-on experience that complements their theoretical studies.


LASER ENGRAVER

The laser engraver in the Gopalan Skill Lab brings a unique blend of precision and creativity, allowing students to work on detailed markings and intricate designs. This tool is capable of engraving various materials with high accuracy, making it ideal for creating customized parts, detailed labels, and intricate design patterns. Using the laser engraver, students can explore the applications of laser technology in manufacturing and material processing. The experience enhances their skills in precision engineering, design thinking, and creative problem-solving.




FLIGHT SIMULATOR

The flight simulator is another cornerstone of the Gopalan Skill Lab, offering an immersive experience that bridges the gap between theoretical knowledge and practical application. This sophisticated tool simulates a wide range of flight conditions, from routine operations to emergency scenarios, providing students with invaluable insights into aircraft handling, navigation, and decision-making processes. By engaging with the flight simulator, students can practice piloting skills and understand the dynamics of flight in a controlled, risk-free environment. This experience is crucial for developing the competence and confidence needed to operate in real-world aviation settings.



WRITTEN BY: GOWTHAM Y V
III YEAR, AE



A-10-WARTHOG (FAIRCHILD REPUBLIC A-10 THUNDERBOLT II)

BY RISHITH R.KUMAR

IT TYPICALLY FLIES AT A RELATIVELY LOW SPEED OF 300 KNOTS (350 MPH/ 560 KM/H), WHICH MAKES IT A BETTER PLATFORM FOR THE GROUND-ATTACK ROLE THAN FAST FIGHTER-BOMBERS, WHICH OFTEN HAVE DIFFICULTY TARGETING SMALL, SLOW-MOVING TARGETS. ALTHOUGH THE A-10 CAN CARRY A CONSIDERABLE AMOUNT OF MUNITIONS, ITS PRIMARY BUILT-IN WEAPON IS THE 30-173 MM GAU-8/A AVENGER AUTOCANNON, ONE OF THE MOST POWERFUL AIRCRAFT CANNONS EVER FLOWN. IT FIRES LARGE DEPLETED URANIUM ARMOR-PIERCING SHELLS. THE GAU-8 IS A HYDRAULICALLY DRIVEN SEVEN-BARREL ROTARY CANNON DESIGNED SPECIFICALLY FOR THE ANTI-TANK ROLE WITH A HIGH RATE OF FIRE. THE CANNON'S ORIGINAL DESIGN COULD BE SWITCHED BY THE PILOT TO 2,100 OR 4,200 ROUNDS PER MINUTE.[75] THIS WAS LATER CHANGED TO A FIXED RATE OF 3,900 ROUNDS PER MINUTE.[76] THE CANNON TAKES ABOUT HALF A SECOND TO REACH TOP SPEED, SO 50 ROUNDS ARE FIRED DURING THE FIRST SECOND, 65 OR 70 ROUNDS PER SECOND THEREAFTER.

THE A-10 HAS A CANTILEVER LOW-WING MONOPLANE WING WITH A WIDE CHORD. THE AIRCRAFT HAS SUPERIOR MANEUVERABILITY AT LOW SPEEDS AND ALTITUDE BECAUSE OF ITS LARGE WING AREA, HIGH WING ASPECT RATIO, AND LARGEAILERONS. THE WING ALSO ALLOWS SHORT TAKEOFFS AND LANDINGS, PERMITTING OPERATIONS FROM PRIMITIVE FORWARD AIRFIELDS NEAR FRONT LINES. THE AIRCRAFT CAN LOITER FOR EXTENDED PERIODS AND OPERATE UNDER 1,000-FOOT (300 M) CEILINGS WITH 1.5-MILE (2.4 KM) VISIBILITY.

WRITTEN BY: RISHITH R K
IV YEAR, AE

Flying into the Future: Innovations Shaping the Next Era of Aviation

Introduction:

The aviation industry stands on the cusp of a transformative era, driven by ground-breaking innovations and technological advancements. As we soar into the future, the landscape of flight is poised to undergo remarkable changes, reshaping the way we travel, transport goods, and explore the skies. In this article, we'll delve into the key innovations that are propelling us towards a new era of aviation, from electric propulsion and autonomous flight to sustainable air travel and beyond.

Electric Propulsion: One of the most significant developments in aviation is the rise of electric propulsion systems. Electric aircraft, powered by batteries, fuel cells, or hybrid-electric designs, promise to revolutionize the way we fly. These eco-friendly alternatives to traditional combustion engines offer quieter, cleaner, and more efficient flight, paving the way for sustainable aviation. Companies like Airbus, Boeing, and startups such as Joby Aviation are at the forefront of this electric revolution, developing innovative aircraft designs that promise to redefine the future of flight.

Autonomous Flight: Another frontier in aviation is autonomous flight technology. Advances in artificial intelligence, sensor technology, and flight control systems are enabling the development of autonomous or semi-autonomous aircraft. While fully autonomous passenger flights may still be on the horizon, autonomous systems have the potential to enhance safety, efficiency, and reliability in aviation operations. From cargo transport drones to unmanned aerial vehicles (UAVs), autonomous flight is unlocking new possibilities for aerial mobility and logistics.

Supersonic and Hypersonic Travel: The dream of supersonic and hypersonic travel is also inching closer to reality. With advancements in aerodynamics, materials science, and propulsion technology, companies like Boom Supersonic and Aerion Supersonic are pioneering the next generation of high-speed aircraft. These aircraft could dramatically reduce travel times for long-haul flights, opening up new possibilities for global connectivity and economic growth. While challenges such as sonic booms and heat management remain, the promise of supersonic and hypersonic travel is tantalizingly close.

Sustainability: As concerns about climate change and environmental impact grow, sustainability has become a top priority for the aviation industry. From alternative fuels and biofuels to hydrogen propulsion and carbon capture technology, airlines and aircraft manufacturers are exploring innovative solutions to reduce the carbon footprint of aviation. Sustainable aviation initiatives aim to make flying greener, with initiatives such as the use of sustainable aviation fuels (SAF) and investments in carbon offset programs. The future of flight is not only about reaching new heights but doing so in an environmentally responsible manner.

WRITTEN BY: CHAITANYA ARDHAYA
II YEAR, AE

DEPARTMENT TALENTS

CONFERENCE, TEXTBOOK CONTRIBUTIONS & GUEST LECTURES



SAVIRAJ A S , ASST PROFESSOR, GCEM



SUPRITH M , ASST PROFESSOR, GCEM



SIVARAMRAJ M , ASST PROFESSOR, GCEM



GRADUATED BATCHES



BATCH 2019-23



BATCH 2020-24

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