# The Arrow

Department of Aeronautical Engineering Newsletter

2017-18 even semester

Volume 2 issue 9

KUMARAGURU
college of technology
character is life

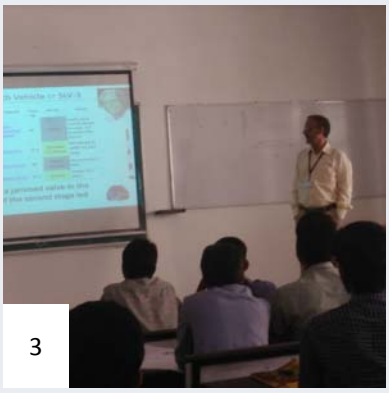
## Character is Life

## - Arutselvar N.Mahalingam

***HoD's Message:***

***A cordial welcome to our biannual newsletter, "The Arrow" .Among our many initiatives, we are working to bring student's excellence in technical event participation, which we witnessed through the National Boeing Aero modelling competition participation from our students. I'm excited to share with you that once again Alumni interactions with the department is highly satisfactory. We look forward to keeping you posted on our progress on each of these vital fronts, and on the remarkable accomplishments of our students, faculty, and alumni.***

## In this issue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### Note from the editors

Welcome to the Aeronautical department's this edition of the newsletter. This edition offers you a variety of events happened over the entire even semester period.

The bench mark event to be considered is the National Aero modelling Competition attended by the third year students which can be read on page 8. As part of the editorial committee we congratulate Mr.Prithvi for getting selected in the Indian Army.

The other highlight events were the Rot cfd guest lecture and Space dynamics guest lecture.

Apart from this the semester seen a variety of guest lectures and industrial visits by faculty members.


### Editorial Committee

### Faculty Co-ordinator

Mr.Muthkumar S, Assistant Professor

**Student Co-ordinators**

1. Mr.Hudson Manuel Asir J
2. Ms.K.M.Lekha


## GUEST LECTURE OF SPACE DYNAMICS

Dr Ram Krishnan Sharma ,Former Scientist, VSSC , Professor, Department of Aerospace Engineering, Karunya Institute of Technology and Sciences, Coimbatore visited the department an addressed the third year students to deliver a guest lecture on space dynamics.

The lecture covered the Indian space program and satellite technologies available with us. He also introduced the space launches and orbit transfers in detail. The technical talk is focused on final year students who were studying Space mechanics as their course. The guest lecture was arranged by Mr.S. Senthil kumar of our department.

## Guest lecture on Rot CFD

Mr Rakend reddy, Research engineer, Sukra Helitech. He discussed about the opportunities in the field of Aerospace engineering research. He elaborated CFD process in detail using ROTCFD .He explained live examples which he worked for NASA helicopters using ROTCFD. For a thorough understanding of the aerodynamic properties of aircraft, high fidelity viscous simulations are necessary as a complement to wind tunnel investigations. RotCFD, a CFD code developed by Sukra Helitek, Inc., offers a design tool that allows the user to manipulate the geometry, generate body-fitted viscous grids, run the flow solver and visualize results, all combined in an easy-to-use, seamless Integrated Design Environment (IDE)

**Aero modeling workshop in the presence of Captain Kannath Howard Mischki**

As part of the KCT aero modeling club and Aeronautical department workshop was conducted for the students on the designing and fabrication of the RC aircrafts during the yugam a techno cultural event of KCT. The event was attended by retired Airforce captain Kannath Howard Mischki

He shared his experience in commercial piloting with the students. The event was attended by students and faculty members from various colleges.


**Interaction with Commercial pilot**

Captain Kannath Howard Mischki who has more than 20 years of Commercial piloting experience visited the department and interacted with the second and third year students regarding the opportunities for the engineering graduates in piloting. He also clarified many of the queries from the students on the flying qualities of a commercial passenger aircraft. The students also got to know the aircraft from a pilot's perspective apart from an engineer's perspective.



**Seminar at Aeronautical Society of India, Bangalore**

Mr. J Darshan kumar attended Technical Talk on the theme Design, Manufacturing, Testing & Validating, Helicopters & engines at Aeronautical Society of India, Bangalore. There were four technical session handled from the experts from HAL, DRDO, SEIMANS & NAL. This event gave an edge over the current state of the art Manufacturing and testing techniques for the Helicopters.

**Airshow at Yugam**

Personnel from AFI technology in association with KCT Aeronautical department had conducted an Airshow during the Yugam which is a Techno cultural event from KCT. The airshow mainly used multi rotor flying vehicle. The team used Phantom model from DJI for the flying purpose. The audience were explained the working and capabilities of the multi rotor drones

**Alumnus in Indian Army visited the institution.**

Mr.Prithvi of 2016 passed out who cleared defense service exam and got selected as an officer in Indian army through SSb visited the college and gave a talk on his experience at the Army and motivated the students to join Defense servies and serve the nation.

Our Joint correspondent Shri. Shankar Vanavarayar also present at the event and congratulated our Alumnus on his success and shown him as a perfect example to the students.


**BOARD OF STUDIES MEETING**

The department conducted the Board of studies with experts from industry and educational institutions to give comments on the curriculum and help us frame the syllabus better. Sivan Shankar Alumnus also present at the occasion.

**Alumni Talk**

Mr Vignesh Dhanapal, Currently working in Ferchau India Engineering Pvt. Ltd., Bangalore, as a Stress Engineer has handled the session.

He is our alumni from aeronautical engineering 2013 passed out.

The session is on the expectation of the company from the fresh graduates.


# BOEING - IIT NATIONAL AEROMODELLING COMPETITION

## AT IIT KANPUR

Boeing - IIT National Aeromodelling Competition was Sponsored by Boeing. Conducted in association with IITB, IITD, IITK, IITKGP, IITM and Aerotrix.

Our students from third year got selected through the regional level competition and participated at the National level round at IIT Kanpur.

This is a RC controlled fixed wing aircraft contest in which a team has to design, fabricate and demonstrate a fixed wing aircraft system that can perform maneuvers mentioned below with given constraints .

The team participation was well appreciated in the department. This is the first time our students are participating in a National level design, build and fly competition.

## GUEST LECTURE ON MILITARY DRONE AND JET ENGINE OF AN AIRCRAFT

### DELIVERED BY COMMANDER IN INDIAN NAVY (RTD)

Mr. Jayakrishnan N Commander in Indian Navy (Rtd) delivered a lecture on Military drones and jet engine in an aircraft.

Mr. Jayakrishnan had Associated with Centre for Airborne Systems (CABS Bangalore (DRDO) for integration of air borne missiles on board Naval aircraft and associated with Naval Physical and Oceanic Laboratory (NPOL) Kochi for commissioning of Advanced Towed Array System (ATAS) for Anti-submarine Warship (ASW) operations. He has a vast experience in Avionics and jet engines.

The lecture focused mainly on the Jet engine technologies and the need of military drones for the future.

The audience were the third and final year students and they were so curious to interact with the guest.

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## Department of Aeronautical Engineering

### INSTITUTE VISION

The vision of the college is to become a technical university of International Standards through continuous improvement.

### INSTITUTE MISSION

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

### DEPARTMENT VISION

To attain excellence and global reputation in Aeronautical Engineering Education and Research.

### DEPARTMENT MISSION

M1: The department is committed to provide quality education in Aeronautical Engineering to students to build their career and do quality research and thus contribute to the field of Aviation and Aerospace.

M2: The department aims to prepare students for their higher studies and research to contribute to the advanced technological needs of Aeronautical engineering.

M3: To encourage faculty to update their knowledge and teaching-learning process through continuous learning.

M4: To undertake inter-disciplinary research to contribute and support the industry.

### PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

The Program Educational Objectives (PEOs) of Aeronautical Engineering Undergraduate Program are to prepare the students:

I. To pursue a successful profession in leading organizations.

II. To pursue postgraduate degrees and conduct research at leading technological universities to contribute to the advancement in the field of Aviation and Aerospace industries.

III. Continue their professional development by utilizing educational and career building opportunities through their employer, educational institutions, or professional bodies.

**PROGRAM OUTCOMES (POS)**

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

and systems.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commitment to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life -long learning in the broadest context of technological change.

**PROGRAM SPECIFIC OUTCOMES (PSOS):**

PSO1: Apply fundamental principles of Aerodynamics, Structures, Propulsion, Materials, and Avionics to provide solutions to aerospace and non-aerospace industrial problems.

PSO2: Use the software packages in the design, manufacturing, testing and maintenance of aeronautical and aerospace based components