

# ACS COLLEGE OF ENGINEERING BENGALURU

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

## **DEPARTMENT OF AEROSPACE ENGINEERING**

# NEWSLETTER









2020-2021



#### **Chief Patrons**

#### Dr. A.C. Shanmugam

Chairman

Moogambigai Charitable & Educational Trust

#### Sri. A.C.S. Arunkumar

Vice Chairman

RajaRajeswari Group of Institutions

#### **Chief Editor**

#### Dr. R. Mukesh

Professor & Head

Department of Aerospace Engineering

#### **Patrons**

#### Dr. S. Vijayanand

**Executive Director** 

RajaRajeswari Group of Institutions

#### Dr. S. Jayabalan

Special Officer

RajaRajeswari Group of Institutions

#### **Editor**

#### Mr. R. Ganesh

Tutor

Department of Aerospace Engineering

#### **ABOUT AEROSPACE DEPARTMENT**

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

### **COURSES OFFERED**

#### **B.E - AEROSPACE 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 Aerospace Engineering was established in year 2017 with under Graduate Course in Bachelor of Engineering in Aerospace Engineering under VTU, Belagavi. The course is approved by AICTE, New Delhi



2017- 2021 batch Aerospace Engineering Students

## **FACULTY DETAILS**

## STUDENT DETAILS

PARTICULARS	QUANTITY	
TEACHING FACULTY	11	
NON TEACHING FACULTY	03	
COMPLETED Ph. D	02	
PURSUING Ph. D	01	
M.E/M.TECH/M.S	08	

PARTICULARS	QUANTITY	
I –YEAR	38	
II – YEAR	49	
III – YEAR	38	
IV –YEAR	AR 33	
Total	158	

# Department is equipped with following laboratories:

- Aerodynamics Laboratory
- Propulsion Laboratory
- Structures Laboratory
- Energy Conversion Laboratory
- Mechanical Measurements and Metrology Laboratory
- Machine shop laboratory
- Design, Modeling and Analysis Laboratory
- Simulation Laboratory
- Foundry and Forging Laboratory
- Metallography and Material Testing Laboratory
- Avionics and Instrumentation Laboratory

## LABORATORY DETAILS





Aerodynamics Lab



**Propulsion Lab** 



Structures Lab



**Energy conversion Lab** 



Mechanical measurements & Metrology Lab



Machine Shop Lab

## **LABORATORIES DETAILS**



Design, Modeling & Analysis Lab



Simulation Lab



Foundry & Forging Lab



Metallography & Material Testing Lab



Flight Simulator



**IRNSS Lab** 

# **Cut Sectional Aircraft Engines**

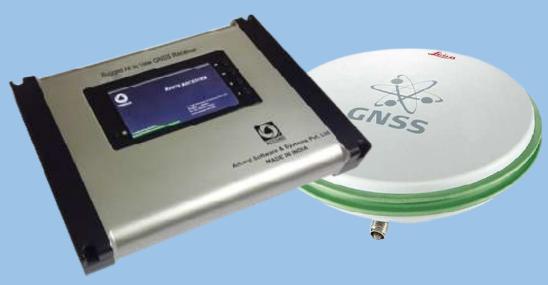


## Tumansky R – 25 – 300 Series Supersonic Jet Engine



14 Cylinder Radial Aircraft Engine

## **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 6 inch 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	
1.	Accord Software and Systems	
2.	SS Technologies (STK Software)	
3.	Simulation and Innovation (SANDI) Engineering Solutions	
4.	Ray Dynamics, Coimbatore.	
5.	BridgeNow Academy, Bangalore.	



**MOU** with Accord Software and Systems

## PROGRAMME ORGANIZED IN THE DEPARTMENT

S.No	PROGRAMME		
1	Webinar on "ARINC 702A Advanced Flight Management Computer System" - 08-08-2020		
2	Webinar on "State of the Art of Small Satellites & A Student-run Cubesat Program at Nanyang Technological University" – 22-08-2020		
3	Webinar on "Seaplane and Hovercraft – Indian seacoast & Lakes"-15-10-2020		
4	Webinar on "System toolkit software"- 27-11-2020		
5	Webinar on "Evolution of Flight vehicle control, Guidance and sensors" - 12-12-2020		
6	Webinar on "Introduction to Advanced Electronics in Aviation"- 29-12-2020		
7	Webinar on "Applications of Artificial Intelligence in Aerospace Engineering"- 19-05-2021		
8	Webinar on "Damage predictions on Nano Composites after high velocity Impact" - 22-05-2021		
9	Webinar on "3D high lift flow computations"-28-05-2021		

# PROGRAMME ORGANIZED IN THE DEPARTMENT

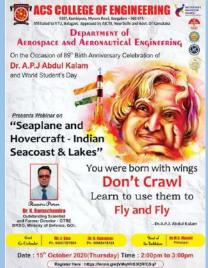
S.No	PROGRAMME		
10	Webinar on "Aviation/Aerospace — Be Different / Hobby corner — HAM radio" — 29-05-2021		
11	Webinar on "Design perspectives in morphing wings an overview" – 04-06-2021		
12	Webinar on "Indian NavIC and other GNSS — Research analysis and challenges" - 05-06-2021		
13	Webinar on "Nanomaterials for Energy Storage Applications" – 12-06-2021		
14	Webinar on "Flow through variable area ducts and influence of shockwaves" – 16-06-2021		
15	Webinar on "Safety and Airworthiness in Aviation" - 17-06-2021		
16	Webinar on "Non planar wing concept for commercial aircraft" – 19-06-2021		
17	Webinar on " The View from space Competitive Collaboration for space Development" – 24-06-2021		



# Webinar on "ARINC 702A Advanced Flight Management Computer System"



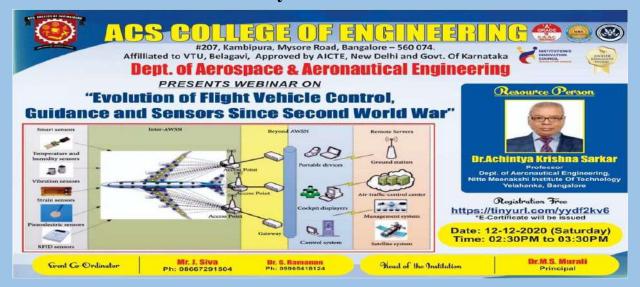
Webinar on "State of the art of small satellites and a student-run Cubesat Program"



Webinar on "Seaplane and Hovercraft – Indian seacoast & Lakes"



## Webinar on "System toolkit software"



Webinar on "Evolution of Flight vehicle control, Guidance and Sensors"



Webinar on "Introduction to Advanced Electronics in Aviation"



Webinar on "Applications of Artificial Intelligence in Aerospace Engineering"



Webinar on "Damage predictions on Nano Composites after high velocity Impact"

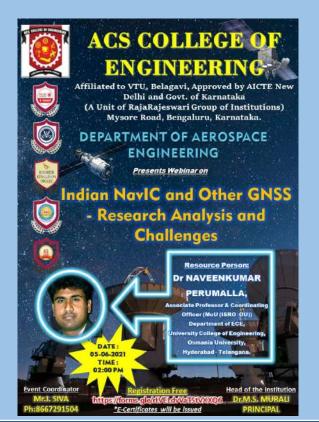




Webinar on "Design perspectives in morphing wings an overview"

Webinar on

"Aviation/Aerospace – Be
Different / Hobby corner –
HAM radio"





Webinar on "Indian NavIC and other GNSS – Research analysis and challenges"

Webinar on "Nanomaterials for Energy Storage applications"



Webinar on "Safety and Airworthiness in Aviation"



Webinar on "Flow through variable area ducts and influence of shockwayes"





Webinar on "Non planar wing concept for commercial aircraft"

Webinar on "The View from Space: Competitive Collaboration for Space Development"



# **STUDENT PROJECT WORK**

S.No	PROJECT DETAILS		
1	Ice accretion analysis and De-icing on a Aircraft/UAV		
2	Ice accretion analysis and De-icing on a Helicopter		
3	Calculation of calorific values for different solid shapes and combination of propellants		
4	Small UAV design and development		
5	Airfoil/ wing shape optimization for Defence UAV		
6	Ionospheric Studies using GNSS data		
7	Prediction of ice accretion in aircraft by using surrogate model.		
8	Preparation of composite materials for aerospace applications.		

TO INFINITY AND BEYOND

# **Funded Projects**

S.No	PROGRAMME	
1	Amount of Rs. 9.59 Lakhs received for the Project Titled "Design and CFD Analysis of UAV" from ADE, DRDO.	

## **STAFF ACHIEVEMENT**

S.No	PUBLICATIONS		
1	R. Mukesh, S. Kiruthiga, S. Mythili, M. Vijay and D. Venkata Ratnam "Analysis of TEC values predicted by OKSM amongst low, mid and high latitude stations during X 9.3 Solar Flare", Astrophysics and Space Science, <b>Springer</b> , 80-2021, https://doi.org/10.1007/s10509-021-03986-8. <b>ISSN: 1572-946X. (IF: 1.830).</b>		
2	R. Mukesh, P. Soma, V. Karthikeyan and P. Sindhu "Prediction of TEC using NavIC/GPS data with geostatistical method/forecasting capability comparison with other models", Astrophysics and Space Science, Springer, 9-2020, 365:152, https://doi.org/10.1007/s10509-020-03868-5. ISSN: 1572-946X. (IF: 1.830).		
3	<b>R. Mukesh</b> , P. Soma, V. Karthikeyan and P. Sindhu "Ordinary kriging - and cokriging - based surrogate model for ionospheric TEC prediction using NavIC/GPS data", Acta Geophysica, <b>Springer</b> , 8-2020, https://doi.org/10.1007/s11600-020-00473-6. <b>ISSN:</b> 1895-7455. ( <b>IF: 2.054</b> )		
4	R. Mukesh, V. Karthikeyan, S. Kiruthiga, S. Mythili and M. Vijay "Prediction of GPS TEC during the X9.3 Solar Flare for DGAR low latitude station by using OKSM", Journal of Physics, 1979(1), 012060, 2021. https://doi:10.1088/1742-6596/1979/1/012060. <b>ISSN:</b> 1742 6588.		
S.No	PROGRAMME/PRESENTATIONS		
1	Mr. J Siva participated in 5 days FDP in Advances in Computational Fluid Dynamics conducted by Symbiosis Institute of Technology.		
2	Mr. J Siva participated in 6 days FDP in Emerging Research Areas in Aerodynamics conducted by Bannari Amman Institute of Technology.		
3	Dr. R. Mukesh Presented a Paper Titled "Prediction of GPS TEC during the X9.3 Solar Flare by using OKMM" In: IVCACME21, Kongu Engineering College, Erode, India, April 2021.		
4	Dr. R. Mukesh Presented a Paper Titled "Prediction of GPS TEC during the X9.3 Solar Flare for DGAR low latitude station by using OKSM" In: Proceedings of ICAIISEN21, SRM TRP Engineering College, Trichy, India, April 2021.		

## **MEMBERSHIP OF PROFESSIONAL BODIES**

S.No	PROFESSIONAL BODIES		
1.	Dr. R. Mukesh, Professor is a member of IEEE, SAE and RAS		
2.	Dr. C. Suresh, Associate Professor is a member of ISTE and IEI.		
3.	Mr. V. Paramaguru, Assistant Professor is a member of ISTE and IEI.		

## **CLASS TOPPERS**

ВАТСН	I RANK	II RANK	III RANK
	IIY	ear	
2019 – 2023			
	III Y	'ear	
2018 – 2022			RAME
	IV Y	ear ear	
2017– 2021			

## **OUR RECRUITERS**

