



### 5.3.2 PRESENCE OF AN ACTIVE STUDENT COUNCIL & REPRESENTATION OF STUDENTS ON ACADEMIC & ADMINISTRATIVE BODIES/COMMITTEES OF THE INSTITUTION

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## CLASS COMMITTEE MEETING (Sample copy)

RAJALAKSHMI ENGINEERING COLLEGE  
THANDALAM-602105

Department of ECE  
Second Class Committee Meeting Circular

**Date** : 09.06.22  
**Class** : III ECE D  
**Class In-charge** : Ms. Saranya G  
**Chairman** : Dr. Thilakavathi B  
**Time** : 1.00 pm to 1.30 pm

S. No	Subject Code	Subject Name	Faculty	Signature
1	EC19601	Antenna Theory	Dr. B. Priya	<i>[Signature]</i>
2	EC19602	Wireless Communication	Dr. Dr. R.Gayathri	<i>[Signature]</i>
3	EC19641	VLSI Design	Ms. M.Anitha Mary	<i>[Signature]</i>
4	EC19642	Communication Networks	Mr. D.Gururaj	<i>[Signature]</i>
5	GE19304	Fundamentals of Management for Engineers	Ms. P.Shanmuga Priya	<i>[Signature]</i>
6	OCS1903	Open Elective-II(Programming using python)	Ms. M.Diviya	<i>[Signature]</i>
7	EC19611	Innovation and Design Thinking for Electronics Engineers	Dr. D.Indumathy	<i>[Signature]</i>
8	EC19641	VLSI Design Lab	Ms. M.Anitha Mary / Dr.J.Saranya / Mr. V. Asokan	<i>[Signature]</i>
9	EC19642	Communication Networks Lab	Mr. D. Gururaj / Ms.G.Saranya / Dr. Sheena Chritabel Pravin	<i>[Signature]</i>

Sl. No	Roll No	Student Name	Signature
1	190801169	S. P. RAMAN. S	<i>[Signature]</i>
2	190801184	VLGARAJA J	<i>[Signature]</i>
3	190801046	S.K.GIYATHRI	<i>[Signature]</i>
4	190801154	S. Sarveswaram	<i>[Signature]</i>
5	190801163	SHREYA SHYAM	<i>[Signature]</i>

*[Signature]*  
Class In-charge

*[Signature]*  
Chairman

*[Signature]*  
H.O.D



*[Signature]*  
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## CLASS COMMITTEE MEETING (Continued)

RAJALAKSHMI ENGINEERING COLLEGE  
THANDALAM-602105

Department of ECE  
Second Class Committee Meeting Report

**Date** : 09.06.2022  
**Class** : III ECE D  
**Class In -charge** : Ms. Saranya G  
**Chairman** : Dr. Thilakavathi B  
**Time** : 1.00 pm to 1.30 pm

Subject Code	Subject Name	Faculty	Student
EC19601	Antenna Theory	Dr. B. Priya	Suizaman S
EC19602	Wireless Communication	Dr. Dr. R.Gayathri	
EC19641	VLSI Design	Ms. M.Anitha Mary	Ulagaraja J
EC19642	Communication Networks	Mr. D.Gururaj	
GE19304	Fundamentals of Management for Engineers	Ms. P.Shanmuga Priya	Gayathri S
OCS1903	Open Elective-II(Programming using python)	Ms. M.Diviya	
EC19611	Innovation and Design Thinking for Electronics Engineers	Dr. D.Indumathy	Sarveswaran S
EC19641	VLSI Design Lab	Ms. M.Anitha Mary / Dr.J.Saranya / Mr. V. Asokan	Shreya Shyam
EC19642	Communication Networks Lab	Mr. D. Gururaj / Ms.G.Saranya / Dr. Sheena Chritabel Pravin	
<b>General Discussion:</b>			
<ul style="list-style-type: none"> <li>* Discussion on CAT1 &amp; CAT2 Result Analysis.</li> <li>* Refer Text Books (prescribed) for end semester exams</li> <li>* Discussion on completion of syllabus.</li> </ul>			
<b>Students Opinion:</b>			
<ul style="list-style-type: none"> <li>* Need symposium - Technical events.</li> <li>* Requested for Industrial Visit</li> <li>* Discussed the importance of MCQ Questions in CAT3.</li> <li>* Updated /New PC's/systems for Labs.</li> </ul>			
<b>Staff Suggestion:</b>			
<ul style="list-style-type: none"> <li>* Try to get Library more often.</li> <li>* concentrate on end semester practical &amp; Exams.</li> <li>* Try to <sup>get</sup> placed more in super dream offers.</li> <li>* maintain good Attendance percentage</li> </ul>			

*Sarany G*  
Class In-charge

*Dr. Thilakavathi B*  
Chairman

*N. V. Prasad*  
H.O.D



*S. V. Prasad*

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## CLASS COMMITTEE MEETING (Continued)

**RAJALAKSHMI ENGINEERING COLLEGE**  
**THANDALAM-602105**  
**Department of ECE**  
**Second Class Committee Meeting Report**

**Date** : 09.06.22  
**Class** : III ECE D  
**Class In-charge** : Ms. Saranya G  
**Chairman** : Dr. Thilakavathi B  
**Time** : 1.00 pm to 1.30 pm

S.No	Subject Code	Subject Name	Faculty	Syllabus Completed	As
1	EC19601	Antenna Theory	Dr. B. Priya	5 units	5
2	EC19602	Wireless Communication	Dr. Dr. R.Gayathri	5 units	5
3	EC19641	VLSI Design	Ms. M.Anitha Mary	5 units	5
4	EC19642	Communication Networks	Mr. D.Gururaj	5 units	5
5	GE19304	Fundamentals of Management for Engineers	Ms. P.Shanmuga Priya	5 units	5
6	OCS1903	Open Elective-II(Programming using python)	Ms. M.Diviya	100%	-
7	EC19611	Innovation and Design Thinking for Electronics Engineers	Dr. D.Indumathy	100%	-
8	EC19641	VLSI Design Lab	Ms. M.Anitha Mary / Dr.J.Saranya / Mr. V. Asokan	100%	-
9	EC19642	Communication Networks Lab	Mr. D. Gururaj / Ms.G.Saranya / Dr. Sheena Chritabel Pravin	100%	-

*Saranyal 09/06/22*  
**Class In-charge**

*Dr. Thilakavathi B*  
**Chairman**

*Sheena*  
**H.O.D**



*S. V. Praveen*

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**RAJALAKSHMI ENGINEERING COLLEGE**  
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## ANTI-RAGGING COMMITTEE (Sample copy)



**RAJALAKSHMI ENGINEERING COLLEGE**

(Accredited by NBA and MAAC)  
 Approved by A.I.C.T.E. & Govt. of Tamil Nadu  
 Affiliated to Anna University, Chennai



27<sup>th</sup> October, 2021

To  
 Mr.S. Krishna Kumar  
 Inspector of Police,  
 Sriperumbudur Police Station  
 Sriperumbudur

Dear Sir,

Sub: Anti-ragging Committee - formation - Reg.  
 Ref: Supreme Court Judgment Dt.8<sup>th</sup> May 2009  
 Civil Appeal No.887 of 2009

You may be aware that the state and central governments are taking all steps to curb the menace of ragging in educational institutions. As per the Supreme Court judgment cited in the reference, every college is required to form an anti-ragging committee. The anti-ragging committee at the level of institution should consist of representatives of Civil and Police administration, Local media, NGO involved in youth activities, representatives of faculty members, representatives of parents, representatives of students belonging to the ffishers' category as well as seniors and non-teaching staff. The committee should be headed by the Head of the Institution.

In this connection, I request you to kindly accept to be a member of the anti-ragging committee and help us in eliminating this evil practice. The function of this committee would be to periodically address the students to create awareness and to recommend punishments as per regulations to any offenders. Kindly confirm your acceptance in the enclosed format.

Looking forward to your kind co-operation.

Thanking you,

Yours sincerely,

*S. V. Thompson*  
 23/10/21



COLLEGE: Rajalakshmi Nagar, Thandalam, Chennai - 602 105, India. Ph: 044-37181111, 37181112 Fax: 044-37181113 Email: admin@rajalakshmi.edu.in  
 CITY OFFICE: 69, New Avadi Road, Kilpauk, Chennai - 600 010, India Ph: 044-26442472, 26461316 Fax: 044-26445151 Email: cityoffice@rajalakshmi.edu.in  
[www.rajalakshmi.org](http://www.rajalakshmi.org)

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## ANTI-RAGGING COMMITTEE (Continued)

**RAJALAKSHMI ENGINEERING COLLEGE, THANDALAM**  
 An Autonomous Institution – Affiliated to Anna University, Chennai

### MEMBERS OF ANTI-RAGGING COMMITTEE (2021-22)

Sl.No.	Category	Name
1	Head of the Institution (Chairman)	Dr. S. N. Murugesan Mobile: 9791135753 Email: principal@rajalakshmi.edu.in
2	Co-Chairman	Mr. I. Philip Praveen Mobile: 9381436664 Email: philippaveen.i@rajalakshmi.edu.in
3	Civil	Mr. G. Venkatesan Tahsildar Sriperumbudur Taluk, Sriperumbudur Mobile: 9445000499 Email: sri.tnkpm@mic.in
4	Police Administration	Mr. K. Rajangam Inspector of Police, Sriperumbudur Police Station Mobile: Email: sriperukpm.2019@gmail.com
5	Local Media	Mr. R. Dcvendran Senior Journalist, Thanthi TV, Chennai
6	NGO	Ms. A. Vijayalakshmi Member, Yuva Sakthi Plot No.57, 3 <sup>rd</sup> Street, Karpagambal Nagar, Kottivakkam, Chennai – 600 041 Mobile: 98845 38752 Email: vijayalakshmiognathan@gmail.com
7	Faculty members	Dr.M.Subbiah (Professor, EEE) Dr.M.Muthusamy (Professor & HOD-H&S) Dr.B.Thilakavathi (Professor, ECE)
8	Representatives of Parents	Mr. V.Sathish Kumar No.8/24, Anna Street, Ram Nagar, Ambathur Chennai – 600 053 Mobile: 8056050166 Email: sathish1972@rediffmail.com
9	Representatives of Students	First year (2) Higher semesters (2)
10	Administration	Mrs. P.Magila Senior Administrative Officer / Co-ordinator (Anti Ragging Committee), REC
11	Representatives of Non-teaching Staff	Mr.B.R. Gopi, Manager (IT) Mobile: 8056763073 Email: manager.it@rajalakshmi.edu.in
12	Nodal Officer	Dr.P.Vasudevan, Assoc. Professor / Physics Mobile: 9841466163 Email: vasudevan.p@rajalakshmi.edu.in



*J. V. Hanuman*  
 PRINCIPAL  
 RAJALAKSHMI ENGINEERING COLLEGE  
 AN AUTONOMOUS INSTITUTION  
 THANDALAM, CHENNAI - 602 105.

**RAJALAKSHMI ENGINEERING COLLEGE [AUTONOMOUS], THANDALAM  
ANTI-RAGGING COMMITTEE**

**Anti-ragging Student Representatives-2021-2022**

1. Name: Deepika PD  
Roll no: 190401022  
Father name: Dillikumar PS  
Branch: Biotechnology  
3<sup>rd</sup> year  
Batch: 2019-2023  
Contact no: 9840297266  
Email: [deepika.pd.2019.bt@rajalakshmi.edu.in](mailto:deepika.pd.2019.bt@rajalakshmi.edu.in)

2. Mohammed Jaffar Sadiq  
Roll no.: 191101091  
Father: Hussain Nawaz  
Branch: Mechanical engineering  
Year of study: 3<sup>rd</sup> year  
Batch: 2019-2023  
Contact no.: 9840127537  
Email: [mohammedjaffarsadiq.h.2019.mech@rajalakshmi.edu.in](mailto:mohammedjaffarsadiq.h.2019.mech@rajalakshmi.edu.in)

3. Name : SHARAN J G  
Roll no : 211201043  
Father's name : Jaisankar M  
Branch : Mechatronics  
Year of study: First year  
Batch : 2021-2025  
Contact No : 8610752881  
Email: [2112101043@rajalakshmi.edu.in](mailto:2112101043@rajalakshmi.edu.in)

4. Name: SRINAATH K S  
Roll no. 210101043  
Father name: K. Senthil Kumar  
Branch: Aeronautical Engineering  
Year of study : First year  
Batch : 2021-2025  
Contact number: 9003829850  
Email: [210101043@rajalakshmi.edu.in](mailto:210101043@rajalakshmi.edu.in)



S. V. Muneer  
16/12/21

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S. V. Muneer

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**SPORTS COMMITTEE 2020-2021**  
**(Sample copy)**

**STUDENT OFFICE BEARERS**

**SPORTS SECRETARY**



**DHAKSHANYA. P**  
**M.TECH BIOTECH**  
**BASKETBALL PLAYER**

**JOINT SPORTS SECRETARIES**



**LOKESHWARAN. R**  
**B.E. MECHANICAL**  
**TABLE TENNIS PLAYER**



**SRINIVASAN. K**  
**B.E. AUTOMOBILE**  
**HAND BALL PLAYER**



*S. V. Meyyappan*

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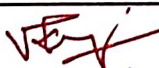
# RAJALAKSHMI ENGINEERING COLLEGE

An AUTONOMOUS Institution  
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Minutes of the IQAC Meeting held Online on  
9<sup>th</sup> March, 2022 at 10.30 a.m. through Google Meet

Members of IQAC :


Name	Designation
Dr. S. N. Murugesan	Principal
Dr. M. Subbiah	Emeritus Professor, EEE
Dr. V. Murali Bhaskaran	Dean Academics
Dr. Johanna Rajkumar	Dean, BioTechnology
Dr. J. Kavitha	Controller of Examinations (Autonomous)
Mr. I. Philip Praveen	Director - T&P and Dean-Student Affairs
Dr. P. Kumar	Director (Alumni Affairs)
Dr. G. Thanigaiyarasu *	Dean - Mechanical Sciences
Dr. K. Bhaskar *	Publications Committee - Coordinator Professor & HoD - Automobile Engineering
Dr. L. Priya *	Industry Institute Interaction Cell - Coordinator Professor - Information Technology
Dr. R. Anto Arockia Rosaline *	Associate Professor - Information Technology
Dr. R. Kalpana *	Library Advisory Committee - Coordinator Professor & Dean - Biomedical Engineering
Mrs. Deborah Sharon. S	Assistant Professor, MBA
Mr. M. Ravichandran	Tahsildar, Sriperumbudur Taluk

  
Dr. V. Prasannakumari,  
M.C.A., M.Phil., Ph.D,  
Professor - Information Technology  
IQAC & NBA Co-ordinator  
Rajalakshmi Engineering College  
Thandalam, Chennai - 602 105

  
Dr.S.N. MURUGESAN, M.E., Ph.D.  
Principal  
Rajalakshmi Engineering College  
Thandalam, Chennai - 602 105.

Mrs. P. Magila	Senior Administrative Officer
Mr. Srinivasan	Administrative Officer
Mr. B. R. Gopi	IT Manager
Mr. Sundaravadivel Purushothaman	Global Head EAS Advance Planning & Logistics Services Tata Consultancy Services Limited
Mr. C. Devarajan	General Manager - TS Ford India Ltd.,
Dr. Sivaramakrishnan. K	Director & Chief Executive Officer Taoka Chemical India Pvt Ltd., (Subsidiary of MNC Taoka Chemical Company Ltd., Osaka, Japan)
Mrs. Rasmi	Parent of Ms.Sneha of III BT
Ms. Deepikashini V	Alumni 2013-17 Batch (B.Tech IT)
Mr. Deepak V M	Alumni 2012-16 Batch (B.E Civil)
Mr. S. Arun Karthick *	Manager, Daimler India Pvt. Ltd., Chennai Alumni 2012 - 2016 Batch (B.E Mechanical Engg)
Mr. Jeyavikraman *	Project Lead, AeroDesign Division, Cyient, Bangalore Alumni 2005-2009 (B.E Aeronautical Engg)
Mr. Sachin Aravind S *	Senior Consultant Hitachi Solutions India Pvt. Ltd. Alumni 2013-2017 Batch (B.Tech IT)
S.Anjana *	Student III Yr CSBS
KVR Badrinarayanan *	Student III EEE A
Vishal Singh.G J *	Student III Auto
Mr. Muthu Veeran B	Student IV B Mech
Dr. V. Prasannakumari	Professor, IT & IQAC Coordinator


\* Included as members of IQAC from Jan 2022

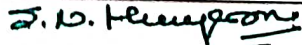
  
Dr. V. Prasannakumari,  
M.C.A., M.Phil., Ph.D,  
Professor - Information Technology  
IQAC & NBA Co-ordinator  
Rajalakshmi Engineering College  
Thandalam, Chennai - 602 105

  
Dr.S.N. MURUGESAN, M.E., Ph.D.  
Principal  
Rajalakshmi Engineering College  
Thandalam, Chennai - 602 105.

Implementation of plans discussed in previous meeting: **ACTION TAKEN**

<u>S. No.</u>	<u>Agenda Point</u>	<u>Activity details</u>	<u>Target</u>	<u>Achievement</u>
1	Online Internships	Students are encouraged to take up online internships	50% of second and third years students	Around 30% of students have completed internship. More are expected to take up in summer
2	Capability building Exercise continues with FDP from SAE India	20 faculty members will get trained in Machine Learning through FDPs from SAE India	Before Jan 2022	Conducted from 19-Jul-21 to 14-Aug-21
3	Technology Business Incubators(TBI)	Taking focused efforts for offering consultancy to specific industries/ establishing Technology Business Incubators(TBI)	Minimum 1 TBI	IIC is constituted and work in progress
4	Centre of excellence in new fields	Centre of excellence in new fields for more industry connect, research, employability enhancement	Minimum 2 CoEs	17 Centres are identified and will be working towards securing Research Funding, Consultancy works, product development & Patents
5	Preparations for NAAC	Webinars are to be arranged to keep everyone aware of the new format of NAAC and data templates will be shared.	Before Dec 2021	NAAC Sponsored One-Day Online Seminar on "Qualitative and Quantitative Metrics in Revised Assessment and Accreditation Framework of NAAC" was organized by IQAC-REC on 17th Sep 2021 having resource experts from NAAC, IISc & Atmiya University.  Core Working group has been formed and Discussions pm Requirements with NAAC SOP were made. Teams are working on collecting data


  
**Dr. V. Prasannakumari,**  
 M.C.A., M.Phil., Ph.D,  
 Professor - Information Technology  
 IQAC & NBA Co-ordinator  
 Rajalakshmi Engineering College  
 Thandalam, Chennai - 602 105


  
**Dr.S.N. MURUGESAN, M.E., Ph.D.**  
 Principal  
 Rajalakshmi Engineering College  
 Thandalam, Chennai - 602 105.

6	NBA - SARs	SARs of 6 Courses whose NBA need to be renewed in Tier I will have to be submitted.  MCT will have to submit its SAR for first time accreditation	Before Nov 2021	10 SARs and 2 compliance reports are submitted.  First team visit is scheduled from Apr 8th to 10th, 2022
7	Keeping all MoUs Active	Activities based on each MoU should be initiated to keep them active. This is a base requirement in NAAC for consideration	Before Dec 2021	Many activities are being conducted based on MoUs by departments
8	Induction Programme for First year students	Upon completion of admissions, Induction programme as per AICTE guidelines will be conducted for the forthcoming first year batch of 2021-22	Before Dec 2021	Conducted as planned including UHV session as prescribed by AICTE
9	Green, Energy & Environment audit	An audit was conducted to assess and suggest us on green, energy and environmental aspects		Suggestions/ Recommendations are submitted to management for consideration

**Suggestions made by Members during previous meeting :**

Tools like Anylogic – certifications can be provided to students to make them industry-ready	Certification courses on latest technologies and tools are conducted by Training dept and academic departments. One credit courses on areas like Microfluidics, Microfabrication etc are proposed.
Feedback on Teaching-Learning can be shared with all faculty without mentioning names of faculty members	Has been shared through HoDs and mentoring is done
A specific Taskforce to be constituted for mentoring students in attitude perspective to help them understand the real work environment and adapt to it.	Alumni series arranged by many departments to mentor their students in real industry expectations and requirements.

  
**Dr. V. Prasannakumari,**  
M.C.A., M.Phil., Ph.D.,  
Professor - Information Technology  
IQAC & NBA Co-ordinator  
Rajalakshmi Engineering College  
Chennai - 602 105

  
**Dr. S.N. MURUGESAN,** M.E., Ph.D.  
Principal  
Rajalakshmi Engineering College  
Chennai - 602 105.

Students can be encouraged to take up Internships from first year onwards	Students are encouraged to take up internship from first year onwards. Many students are expected to pursue during summer holidays
Social media coordinator to promote achievements in FB, LinkedIn etc	IT Manager keeps posting all programme information and achievements immediately in FB, Twitter & Instagram. Many InstaLive programmes have been conducted which had got good response also.

## Plans for next semester :

<u>S. No.</u>	<u>Agenda Point</u>	<u>Activity details</u>	<u>Target</u>
1	Preparing for NBA Accreditation	Application for NBA re-accreditation has been made for 10 programmes. 2 Compliance reports also have been submitted. Plans and preparation is in progress. Audits have been carried out to identify scope for improvement.	Before First week of April 2022 HoDs and all supporting departments
2	Preparation of NAAC SSR	For accreditation of third cycle of NAAC, preparations are underway for consolidation of data and submission of Self Study Report (SSR)	Core Working group has been formed and Requirements with SOP were discussed. Teams are working on collecting data . SSR to be prepared before June 2022
3	Student Internships	Students are encouraged to take up internships for practical exposure.	HoDs and faculty counsellors are encouraging students to take up internships during holidays. Before July 2022
4	Publications	A forum for enhancing publications has been constituted to encourage and guide faculty members in publishing more papers. For appreciating the good work done and for encouraging quality research output through publications, patents and funded projects, incentives are being announced and awarded	Publications target will be one per faculty in Scopus/SCI indexed journals every year

Dr. V. Prasadakumari,  
M.C.A., M.Phil., Ph.D.  
Professor - Information Technology  
IQAC & NBA Co-ordinator  
Rajalakshmi Engineering College  
Thandalam, Chennai - 602 105

S.N. Murugesan  
Dr.S.N. MURUGESAN, M.E., Ph.D.  
Principal  
Rajalakshmi Engineering College  
Thandalam, Chennai - 602 105.

5	Consultancy	Activities focused towards Industry Institute Interaction are encouraged and more activities are being carried out.	IIIC & HoDs will work together to explore faculty specialisations and suitable industry appropriately
6	Student Satisfaction Survey	SSS as per NAAC guidelines has been conducted via google form and responses analysed	Feedback analysis committee will present the summary of feedback to all departments concerns and appropriate actions will be taken up. Final report will be submitted to Principal before End of April 2022


#### Accolades and Activities:


#### Research Grants:

- REC has been sanctioned a grant of 1.37 Crores by DST under FIST programme for setting up sophisticated analytical instrumentation laboratory for multidisciplinary research in biological sciences.
- Dr.Natteri M.Sudharshan has got a sanction order from Aeronautics R&D Board for CFD Simulation of Ring Laser Gyroscope to a tune of 19.87 Lakhs
- Dr.Suresh Chandra Kandai received funding of Rs.16.69 Lakhs for his project submitted to Aerodynamics Panel of Aeronautics R&D Board

#### Patents:

- Patent is granted to Dr.Geetha and Dr.Selvakumar, (Patent No 383096) for the invention titled, 'Grinding waste from automobile industry as a potential construction material' on 29th November 2021.
- Patent (No 390224) granted to Dr. V.Gayathri, Dr. Johanna Rajkumar, R. Dhanusree and M.M.Akshya Lakshmi for "Guava Leaf Extract - Stored Food Grain Insecticide" on 24/02/2022
- Mr. R. SharathPrasanna, Mr. R. ShyamBalaji, Dr. R. Shanthi got Design patent (No. 334738-001) issued for "Electric Wrench Cum Jack Screwer" on 09/12/2020
- Patent is granted to Dr.J.Kavitha (Patent No 380744) for Homopolar axial flux hub stepper motor on 29th October 2021.
- Dr.V.Gayathri & Dr.Carlin Geor Malar filed the Patent Application under the title of "Biopesticides to store food grains" along with Hajarah Begum M H, III yr. BT.

  
**Dr. V. Prasannakumari,**  
 M.C.A., M.Phil., Ph.D,  
 Professor - Information Technology  
 IQAC & NBA Co-ordinator  
 Rajalakshmi Engineering College  
 Thandalam, Chennai - 602 105.

  
**Dr.S.N. MURUGESAN, M.E., Ph.D.**  
 Principal  
 Rajalakshmi Engineering College  
 Thandalam, Chennai - 602 105.

- Dr.Prithi.S, Ms.S.Ponmani, Ms.Jinu Sophia, Ms.R.Akiladevi and Ms. Daya Mary Mathew has got patent published on 8th October 2021 "Innovative Semi-Supervised Learning Methodology For Video Data Sorting Based On The SVDD Algorithm". Patent Application No. 201941028199
- Dr. Anantha Sivaprakasam S has got patent published on 7 Jan, 2022 "Image Processing Based Methodology For Image Segmentation Using Artificial Intelligence And Deep Learning". Patent Application No. 202111061357
- Dr N Srinivasan has got his patent entitled "HANDHELD PORTABLE DEVICE WITH A FUZZY BASED APPROACH FOR AUTOMATED HEALTH CARE" published and it is in the final stage of Examination for Grant. Patent Application Number : 201941005028.
- Dr. A. Asha filed a patent titled " Method for Minimizing the Battery Power Usage in Mobile AdHoc Networks" in July 2021.
- Students patent: Iniya R, Jabin Alfy and Janavi R, IV ECE submitted a Patent (No. 202141025215) titled "Voice Controlled Wheelchair With Automatic Body lifting Mechanism" and it got published in June 2021

#### Start-up companies :

14 start-up based on funded projects have been started.

#### Consultancy :

- 13 consultancy works to a tune of 48.23 Lakhs has been secured and is in progress including companies like Super Auto Forge, Rane, Nippon Paints, Sakthi Auto Components, MTE Industries-Hyd etc
- Student consultancy: Vigneshwar KR, Vishal Balaji Sivaraman, Vishal A, Niteesh Babu.G.S, Shiva Shankar. U, Sanjeev Kumar.M and V.Narayanan, IV ECE did a consultancy work titled, "IoT SmartBoat" for the host institution, Dextroware Devices, IITM RESEARCH PARK for which they received certificate of Appreciation & Cash Award

#### NPTEL:

REC has been awarded special recognition as "LC STAR" based on the performance in the certification exams and for its consistent standing in Top 100 Ranks for consecutive 8 sessions

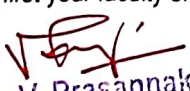
#### IQAC Activities:

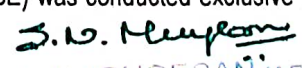
- NAAC Sponsored Seminar:

NAAC Sponsored One-Day Online Seminar on "Qualitative and Quantitative Metrics in Revised Assessment and Accreditation Framework of NAAC" was organized by IQAC-REC on 17th Sep 2021 having resource experts from NAAC, IISc & Atmiya University. 1306 participants from 17 states attended.

- Faculty Orientation Program:

Faculty Orientation Program for Outcome based Education (OBE) was conducted exclusive to first year faculty on 4 March, 2022.

  
Dr. V. Prasannakumari,  
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IQAC & NBA Co-ordinator  
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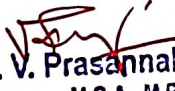
  
Dr.S.N. MURUGESAN, M.E., Ph.D.  
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**PhD Viva-você completion:**

19 research scholars have successfully defended their thesis and received their doctoral degree during this period.

**Faculty Achievements:**

- Dr. S. Raj Kumar Board of Studies Member for revision of curriculum and syllabus under regulation 2021-R, at Faculty of Information and Communication Engineering, Anna University (for Affiliated Institutions).
- Dr. V. Gayathri & Ms.K.S.Shreenidhi of BioTech. served as the Judges for (International Genetically Engineered Machine Competition) (iGEM2021), held at Boston, USA, November 2021.
- Dr.M.Selvakumar and Dr.S.Geetha has been nominated by DST SERB to attend the research meeting to discuss on " Aspects on Developing Research Proposals in the areas of Civil, Infrastructure and Transportation Engineering " organized by IISc, Bangalore and DST.
- Dr.S.Geetha was recognized as DISCIPLINE STAR by NPTEL for completing more than 50 weeks
- Dr.M.Selvakumar delivered a guest lecture as a resource person on the topic "Environment and its Impact" for UHV-AICTE Student Induction Programme at SRM, Valliammai Engineering College on 27.10.2021
- Dr.A.Rose Enid Teresa was the team leader for the student's study tour to ATAL Tunnel, Himachal Pradesh, India under "Youth Undertaking Visit for Acquiring Knowledge (YUVAK)" scheme fully sponsored by All India Council of Technical Education (AICTE) from 14th to 21st November 2021.
- Dr.A.Rose Enid Teresa was appointed as Syllabus Sub Committee member for reviewing the Curriculum and Syllabus of R-2021 for B.E. Civil Engineering programme to be offered in the Non-Autonomous Colleges Affiliated to Anna University.
- Dr.S.Geetha arranged and coordinated GATE and Conceptual understanding for Civil Department students with IIT Madras Prime Minister's Research Fellowship (PMRF) research scholars
- Dr.S.Geetha and Dr.M.Selvakumar has secured Rs.1,43,000 from Sakthi Auto Component Limited, Tirupur for Research on Potential Utility of Foundry Sand Waste as Sustainable Construction Material
- Dr. S. Poonkuzhali is listed as Top 51 Indian Woman Achievers in STEM (7 Aug, 2021)
- Dr N Srinivasan is nominated as a member of the Independent Expert Committee for evaluating the solutions of (NEAT 2.0) National Educational Alliance for Technology and appreciation certificate received from AICTE.
- Dr. Manikandan and Dr. S. Suganthi was appointed as Expert by AICTE for the Student learning Assessment (SLA) Project on July 2021
- Dr. S. Chitra was a member nominated by Anna University for Board of Studies of ECE department , Sri Sairam Institute of Technology, Chennai (27.7.21)

  
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- Dr. B.Priya attended Academic Courses syllabus subcommittee meeting for the formulation of regulation and curriculum with syllabus for P.G. (EST) R 2021 for the non-autonomous Institutions Affiliated to Anna University on 29 July, 2021 as a committee member
- Dr. S. Suganthi, Mr. V. S. Selvakumar & Ms. J. Saranya successfully completed three month pre incubation training towards " How to take Prototype of our product to large scale production through proper guidelines" organized by HTIC- IITM and got selected for Virtual incubation at the Bioincubators Nurturing Entrepreneurship for Scaling Technologies (Bio-NEST)
- Dr. S. Suganthi, Mr. V. S. Selvakumar & Ms. J. Saranya had a discussion with Prof.Kalarani Dandala, CEO of SPMVV - WBIF to derive the workflow for synthesizing and optimizing our nanoformulations and launched their first batch of antiviral masks using industrial partner's help. Faculty start-up Armorshield Healthcare Innovations. Incubation space of 100 square feet wet lab, 200 square feet space for discussion has been allotted to carry out R&D work.
- Dr.Sathish M was recognized as a supervisor for guiding Ph.D. scholars of Anna University under the faculty of Information and Communication Engineering in Aug 2021.
- Dr. D. Indumathy and Sushma S Jagtap were selected for IITM HTIC Accelerated Pre-incubation program (API) on September 2021
- Dr. K. Senthil Kumar was appointed by AICTE for the third time consecutively to review the 48 MCQ on Analog and Digital Communication - October 2021
- Mr.S.Sudharsan acted as a Primary Evaluator in the Toyathon 2021 organised by the Ministry of Education Information Cell, AICTE, India in December 2021
- Mrs R.Kavitha received Cash award - third prize- national level contest-MEMS Innovation Challenge conducted by Semiconductor Technology and Applied Research Center on 20 Dec , 2021


#### Student Achievements:

- Vishwamalyan J S, II AIML, got I prize with cash award of Rs.10000 in Crosshairs – Valorant tournament, Passion 2021 organized by Institute of Management Technology, Ghaziabad
- Vishwamalyan J S and Yeswanth C II AIML, got I prize with cash award of Rs.2000 in Headshot organized by IIM Sambalpur.
- Vasanta Vaarshni U, IV yr. BT underwent Indian Academy of Science fellowship at Indian Institute of Technology Bombay, Mumbai in the title of "Dynamic simulation of freeze-dried products" with a financial support from June 24 - August 18, 2021
- Vigneshwar R, IV yr. BT underwent Internship at Concordia University / Mitacs Canada with the living stipend of Can\$900 and a stipend of Can\$300 for any student fees charged by the Canadian host institution in the field of "Fungal Genetic Engineering" from May 17 – August 06, 2021
- Apoorvha JP, III yr.BT underwent Indian Academy of Science - Summer Research Fellowship programme 2021, in the institute of Liver and biliary sciences, New Delhi and worked on a project titled, "Study of erythropoiesis pattern in chronic liver disease patients with severe anaemia" from August 02 – September 25, 2021.

  
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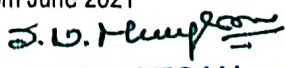
- Aravindan.S, III yr. BT underwent Indian Academy of Science - Summer Research Fellowship Programme 2021 in the field of Nanotechnology at RMRC-ICMR, Bhubaneshwar and worked on the project entitled. "Eradication of Biofilm Using Nanoparticles" with a stipend of Rs.12, 500/- per month from July 29 –September 10, 2021.
- Vigneshwar R , Shree Abivarnikha G and Vasanta Vaarshni U ,IV yr.BT won Tamil Nadu Student Innovators Award 2020, for the project entitled "A natural product to instantly treat wounds by arresting the bleeding, disinfecting, and aiding in the healing process": Qure - Saviour mentored by Dr Johanna Rajkumar, Professor and Dean organised by Entrepreneurship Development and Innovation institute - Tamil Nadu (EDII-TN) and Centre for Entrepreneurship Development, Anna University (CED AU) and won cash prize of ₹1,00,000/- held in the month of September 2021.
- Vigneshwar R & Vasanta Varshini ,IV yr. BT were selected as the Runner Up with a prize money of Rs.33,000/- for XVI Fujio Cup NCRM NICHE Quiz 2021 an international quiz programme in the fields of Stem Cells & Regenerative Medicine for Life Sciences, Biotechnology, Veterinary Science, Dentistry and Medicine, under the sole organising responsibility of M/s GN Corporation, Japan based on a licensing arrangement with NCRM held on October 17,2021.
- Jeevanantham S,II M.Tech won II prize for the oral presentation on "Agricultural waste derived Nanocellulose and its Applications in Heavy Metal Adsorption: Extraction and Optimization studies" at "National Virtual Conference on Recent Advances in Nanoscience and Nanotechnology' (RANN - 2020) Vidyavardhaka College of Engineering (VVCE), Mysuru, Karnataka." on 12.11.2021
- H. Jayalakshmi, II M.Tech, received the Best paper award presented a paper on "Optimization Of The Removal Of Crystal Violet Dye From Textile Effluent Using Azadirachta Indica Bark Biochar" at Bannari Amman Institute of Technology, National Conference on Sustainable Materials and Smart Practices (NCSMSP-2021) on 17-12-2021 to 18.12.2021
- J.Govindha Krishnan, 2017 batch student was the National Runner-up of Ultra Tech India Next Stimulus (A Civil Engineering Quiz) in Ultimate Grand National Finale which was held on 29.07.2021 with 5 Participants,5 States, 5 Zones and 5 Quiz rounds
- Raja Aravindan R and Charann A, III CSBS won the Jury's Choice Award in IBM Hack Challenge 2021 hosted by IBM and SmartBridge from 21 July to 31 August, 2021.
- Anjana S, III CSBS participated in Ulpath Community Developer Program in RPA Summer School organized by Uipath and REC, 5-24 August, 2021
- Anjana S and Vijayalakshmi K, III CSBS won first place in Ideathon, Techquest conducted by Delhi Technological University, 7-9 October, 2021.
- Valli T, Ruthvik S, Senthilnayaki N and Tamilarasan II CSBS won second place in the Technological Business Hackathon conducted by AIESEC from 9-16 October, 2021.
- Vishal Ananth J and Charanya C won third place in Technological Business Hackathon conducted by AIESEC from 9-16 October, 2021.
- Anjana S, III CSBS is a certified Cyber Hygiene Practitioner, Ministry of Electronics and Information Technology hosted by IESA Cyber Hygiene Practitioner from 16 October 2021.
- Anjana S, Ashwin Prasad H and Charann A, III CSBS participated in HCL IITK Cyber Hackathon 2021 organized by HCL and IIT K (ongoing event from 27th November 2021)

  
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- Raja Aravindan R won 1st place in Education (1000 USD) in Open Innovation Hackathon - An Initiative of Reskill organized by Meta and Spark AR from 8 November to 20 December, 2021
- Charanya C, II CSBS won runner-up in Pre-Australs, Inter-Varsity Debate Tournament, TNNLU in 4-5 December 2021
- Mohammed Fahad FS, III CSBS, is Finalist (Project Covid Chatbot) organized by NITK and Airtel 24-26 January, 2022
- Anjana S and Vijayalakshmi K, III CSBS participated in Dframe-UI/UX Design Hackathon, Udgam 2022 organized by IIT Guwahati
- Anjana S, Charann A, Raja Arvindan R and Poojitha B, III CSBS qualified for the finals in Automathon, Techfest organized by IIT Bombay from 23 Dec 2021 (ongoing).
- Anjana S, III CSBS received \$200,000 technical & marketing credits (No T&Cs), 1 year access to weekend mentoring sessions by CEOs, 8-week case studies based peer-to-peer mentoring program, Get help from a network of 500+ Startup Fellows, Pitch to investors when you gain traction through Xartup Fellowship 3.0 conducted by Xartup from 13 to 19 Jan, 2022.
- Anuranjan, Deepak Raghavan and Arjun Prasad, CSE participated in CII Hackathon- 72 hour and was one among the top 3 teams and received a prize money of ₹25,000 from the Honourable Chief Minister of Tamil Nadu M. K. Stalin on the 26th of November at ITC Grand Chola
- Charulatha G, CSE won second prize in Engineers Day event conducted by CSI on 8 Dec, 2021
- Jeevana V and Jayapriya R G, CSE won third place in Chennai Chapter Intercollegiate Quiz organized by CSI on 8 Dec, 2021
- Gayathri, Abhinaya and Guruprasath, II EEE have won Grand Final selection in TOYCATHON 2021 organized by AICTE on 7 June, 2021
- Harish Aravind, IV EEE, won first position in Vehicle Design and CAE, Cost Evaluation in BAJA season 4 competition conducted by The Federation of Mechanical and Automobile Engineers (FMAE), Hyderabad from 1-5 October, 2021
- Sundaramoorthy, IV EEE, published a paper in IETE Journal of Research, Taylor & Francis Publication with impact factor 1.125
- Jabasteena R, IV FT won third place in Symposium in BIT Tech Fest '21 conducted by Bannari Amman Institute of Technology on 20 August, 2021
- Yamuna P, IV FT won Best Food Concept Award in Food Product Pitch Challenge conducted by DPRO Food Consult on 27-29 June, 2021.
- Aishwarya L, Belsy Veda Evangeline and Kavya S, II MBA won third place in Virtual Business Plan - Hackathon conducted by Adarsh AIMIT, (Bangalore) on 4-6 September, 2021
- Vishal Balaji Sivaraman, Niteesh Babu.G.S, Shiva Shankar. U, Sanjeev Kumar.M and V.Narayanan, III ECE submitted a proposal VLAB development for communication systems Lab to PALS/ NITK SURATKAL on June 2021. Received Certificate of Completion for successful completion & deployment of "Amplitude Modulation and Demodulation" experiment under new VLAB " Communication Systems Laboratory" from PALS- IITM in association with NITK, suratkal in July 2021.
- Vaidheeswar D, IV ECE is CISCO Certified Network Associate from June 2021

  
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- V.EzhilMaran and D.Vikhram Nataraj, IV ECE won first position in Vehicle design and CAE in National level BAJA Season-4 Competition in Vehicle design and CAE organized by Federation of Mechanical and Automobile Engineers(FMAE) Hyderabad, Telangana on 1-5 October, 2021
- Denesh S, Kanish R and Sayad Pervez B, IV ECE won first position in SAE Self-Driving Car Challenge 2021 in National level BAJA Season-4 Competition in Vehicle design and CAE organized by Federation of Mechanical and Automobile Engineers(FMAE) Hyderabad, Telangana and SAE India, Southern section on 1-5 October, 2021
- Denesh S, Kanish R and Sayad Pervez B, IV ECE won third position as - Team Redline Racing - in Quiz event in National level BAJA Season-4 Competition in Vehicle design and CAE organized by Federation of Mechanical and Automobile Engineers(FMAE) Hyderabad, Telangana and SAE India, Southern section on 6-10 December, 2021
- Kirti Priyanka, II ECE presented a paper under the topic "Demystifying Global Payroll" in Neeyamo's paper presentation competition in TALANTON'21 organized by Neeyamo and received certificate and winner with cash award of Rs.50000/-

#### Sports Achievements:

- Our College Student Mr P.Vahin of final year Mechanical who has been selected to represent in Anna University Badminton Team and attended south zone inter university tournament at Koneru Lakshmaiah Education Foundation, Guntur, Andhra Pradesh from 06.12.2021 to 10.12.2021
- Our College Student Mr.B.Jayasivaakrishnan of third year CSE who secured Gold (400mts) and silver medal (400mts relay) in Tamil Nadu Inter District Athletic competition organised by Tamilnadu Athletic association from 09.10.2021 to 10.10.2021.
- Our College Student R.Sri Varshini of first year ECE who has been selected to represent in Tamilnadu Netball team and attended South zone National Netball Championship held at puducherry on 25.12.2021 & 26.12.2021
- Our College Table Tennis Team student Mr.R.Aravind Kumar of final year ECE who has been selected to represent in Anna University Table Tennis team and attended south zone inter university tournament at Reva University Bangalore from 03.01.2022 to 06.01.2022
- Sujith.D of second year MBA secured Gold medal (1500mts) in South Zone Rural Games - 2021 which is organised by Tamilnadu Rural Games Association on 23.10.2021 & 24.10.2021 at kancheepuram.
- Ms. M. Akshaya of second year EEE who won the Gold Medal in Anna University inter zone karate competition held at K. L. N. College Engineering, Madurai on 25.02.2022 & 26.02.2022
- Mr. N. Santhosh of second year Automobile Engineering who won the Gold medal in state level Boxing competition which is organised by Tamilnadu Boxing Association on 28.02.2022.
- Mr. M. S. Tamilarasan of final year EEE who has been selected to represent in Anna University Kho -Kho team.

#### Suggestions by External members:

- It is suggested to conduct maximum number of face-to-face in-campus seminars by alumni to motivate and mentor current students



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# RECTRIX



**QUARTERLY MAGAZINE FROM  
THE DEPARTMENT OF  
AERONAUTICAL ENGINEERING**

# VISION & MISSION STATEMENT OF THE INSTITUTION

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## VISION

TO BE AN INSTITUTION OF EXCELLENCE IN ENGINEERING, TECHNOLOGY, MANAGEMENT EDUCATION & RESEARCH. TO PROVIDE COMPETENT AND ETHICAL PROFESSIONALS WITH A CONCERN FOR SOCIETY.

---

## MISSION

TO IMPART QUALITY TECHNICAL EDUCATION IMBIBED WITH PROFICIENCY AND HUMANE VALUES. TO PROVIDE RIGHT AMBIENCE AND OPPORTUNITIES FOR THE STUDENTS TO DEVELOP INTO CREATIVE, TALENTED AND GLOBALLY COMPETENT PROFESSIONALS. TO PROMOTE RESEARCH AND DEVELOPMENT IN TECHNOLOGY AND MANAGEMENT FOR THE BENEFIT OF THE SOCIETY.

# VISION & MISSION STATEMENT OF THE DEPARTMENT

## VISION

TO PROVIDE EXCELLENT GRADUATE EDUCATION IN AERONAUTICAL ENGINEERING AND CONTINUOUSLY SUPPORT THE COMMUNITY OF AEROSPACE PROFESSIONALS THAT WILL SPEARHEAD AND STRENGTHEN THE DESIGN AND DEVELOPMENT OF AEROSPACE RELATED INDUSTRIES AND INSTITUTIONS IN INDIA.

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## MISSION

- ◆ Work to Quality Exposure in Theory and Practical with Proficiency, Skill and Humane Values with the Best Teaching and Industrial Expertise.
- ◆ Strive to Develop and Provide Excellent Laboratories.
- ◆ Try to Provide Good Exposure to recent Trends in Industry.
- ◆ Work to Promote Research and Development Activities in the Sphere of Aeronautics for the Benefit of Society.
- ◆ Guide the Students in Right Direction, Providing them Better Ambience and Opportunities to Develop in to Creative, Talented and Globally Competent Aero Professionals.

# DEPARTMENT OF AERONAUTICAL ENGINEERING

## PROGRAMME EDUCATIONAL OBJECTIVES

### PEO # I

OUR GRADUATES SHOULD HAVE THE ABILITY TO APPLY KNOWLEDGE ACROSS THE DISCIPLINES AND IN EMERGING AREAS OF AEROSPACE ENGINEERING FOR HIGHER STUDIES RESEARCH, EMPLOYABILITY AND PRODUCT DEVELOPMENT.

### PEO # II

OUR GRADUATES SHOULD HAVE THE COMMUNICATION SKILLS SENSE OF RESPONSIBILITY TO PROTECT THE ENVIRONMENT AND ETHICAL CONDUCT TOWARDS THEIR PROFESSION COMMITMENT TO SERVE THE SOCIETY.

### PEO # III

OUR GRADUATES SHOULD POSSESS ACADEMIC EXCELLENCE, MANAGERIAL SKILLS, LEADERSHIP QUALITIES AND UNDERSTANDING THE NEED FOR LIFELONG LEARNING FOR A SUCCESSFUL PROFESSIONAL CAREER.

## PROGRAMME OUTCOMES

ENGINEERING GRADUATES WILL BE ABLE TO ,

1. ENGINEERING KNOWLEDGE: APPLY THE KNOWLEDGE OF MATHEMATICS, SCIENCE, ENGINEERING FUNDAMENTALS, AND AN ENGINEERING SPECIALIZATION TO THE SOLUTION OF COMPLEX ENGINEERING PROBLEMS.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. ETHICS: APPLY ETHICAL PRINCIPLES AND COMMIT TO PROFESSIONAL ETHICS AND RESPONSIBILITIES AND NORMS OF THE ENGINEERING PRACTICE.
9. INDIVIDUAL AND TEAM WORK: FUNCTION EFFECTIVELY AS AN INDIVIDUAL, AND AS A MEMBER OR LEADER IN DIVERSE TEAMS, AND IN MULTIDISCIPLINARY SETTINGS.
10. 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.
11. 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.
12. LIFE-LONG LEARNING: RECOGNIZE THE NEED FOR, AND HAVE THE PREPARATION AND ABILITY TO ENGAGE IN INDEPENDENT AND LIFELONG LEARNING IN THE BROADEST CONTEXT OF TECHNOLOGICAL CHANGE.

## PROGRAM SPECIFIC OUTCOMES (PSOS)

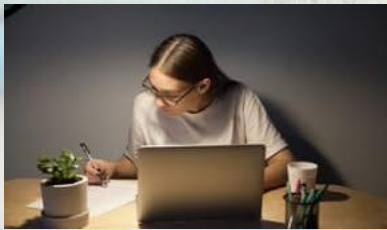
A GRADUATE OF THE AERONAUTICAL ENGINEERING PROGRAM WILL

1. DEVELOP DEEP WORKING KNOWLEDGE TO SOLVE COMPLEX PROBLEMS IN AERODYNAMICS, PROPULSION, STRUCTURES AND FLIGHT MECHANICS
2. DEMONSTRATE THE PROBLEM-SOLVING ABILITY AND HANDS-ON SKILLS TO ENTER CAREERS IN THE DESIGN, MANUFACTURING, TESTING, OR MAINTENANCE OF AERONAUTICAL SYSTEMS.
3. BE EQUIPPED TO USE CAE PACKAGES AND SIMULATION LANGUAGE SKILLS TO SOLVE PRACTICAL, DESIGN AND ANALYSIS PROBLEMS.



## EDUCATION IN TIMES OF PANDEMIC

The state governments across the country, has shut down schools and colleges temporarily as a measure to contain the spread of the novel coronavirus. It's close to a couple of month and there is no certainty when they will reopen. This is a crucial time for the education sector—board examinations, nursery school admissions, entrance tests of various universities and competitive examinations, among others, are all held during this period.



As the days pass by with no immediate solution to stop the outbreak of **Covid-19**, school and university closures will not only have a short-term impact on the continuity of learning for more than 285 million young learners in India but also engender far-reaching economic and societal consequences.

The structure of schooling and learning, including teaching and assessment methodologies, was the first to be affected by these closures. Only a handful of private schools could adopt online teaching methods. Their low-income private and government school counterparts, on the other hand, have completely shut down for not having access to **e-learning solutions**. The students, in addition to the missed opportunities for learning, no longer have access to healthy meals during this time and are subject to economic and social stress.

The pandemic has significantly disrupted the higher education sector as well, which is a critical determinant of a country's economic future. A large number of Indian students—second only to China—enroll in universities abroad, especially in countries worst affected by the pandemic, the US, UK, Australia and China. Many such students have now been barred from leaving these countries. If the situation persists, in the long run, a decline in the demand for international higher education is expected.

The bigger concern, however, on everybody's mind is the effect of the disease on the employment rate. Recent graduates in India are fearing withdrawal of job offers from corporates because of the current situation.

The Centre for Monitoring Indian Economy's estimates on unemployment shot up from 8.4% in mid-March to 23% in early April and the urban unemployment rate to 30.9%.

Needless to say, the pandemic has transformed the centuries-old, chalk-talk teaching model to one driven by technology. This disruption in the delivery of education is pushing policymakers to figure out how to drive engagement at scale while ensuring inclusive e-learning solutions and tackling the digital divide.

A multi-pronged strategy is necessary to manage the crisis and build a resilient Indian education system in the long term.

1. Immediate measures are essential to ensure continuity of learning in government schools,



and universities. Open-source digital learning solutions and Learning Management Software should be adopted so teachers can conduct teaching online. The **DHIKSHA**

Platform, with reach across all states in India, can be further strengthened to ensure accessibility of learning to the students.

2. Inclusive learning solutions, especially for the most vulnerable and marginalized, need to be developed. With a rapid increase of mobile internet users in India, which is expected to reach 85% households by 2024, technology is enabling ubiquitous access and personalization of education even in the remotest parts of the country. This can change the schooling system and increase the effectiveness of learning and teaching, giving students and teachers multiple options to choose from. Many aspirational districts have initiated innovative, mobile-based learning models for effective delivery of education, which can be adopted by others.
3. Strategies, required to prepare the higher education sector for the demand-supply across the globe particularly to the global mobility of students and faculty and improving the quality of higher studies in India. Immediate measures are required to mitigate the effects of the pandemic on job offers, internship programs, and research projects.





4. It is also important to reconsider the current delivery and pedagogical methods in school and higher education by seamlessly integrating classroom learning with e-learning modes to build a unified learning system. The major challenge in **EDTech** reforms at the national level is the seamless integration of technology in the present Indian education system, which is the most diverse and largest in the world with more than 15 lakh schools and 50,000 higher education institutions. Further, it is also important to establish quality assurance mechanisms and quality benchmark for online learning developed and offered by India HEIs as well as e-learning platforms (growing rapidly). Many e-learning players offer multiple courses on the same subjects with different levels of certifications, methodology and assessment parameters. So, the quality of courses may differ across different e-learning platforms.

5. Indian traditional knowledge is well known across the globe for its scientific innovations, values, and benefits to develop sustainable technologies and medicines. The courses on Indian traditional knowledge systems in the fields of yoga, Indian medicines, architecture, hydraulics, ethnobotany, metallurgy and agriculture should be integrated with a present-day mainstream university education to serve the larger cause of humanity.

In this time of crisis, a well-rounded and effective educational practice is what is needed for the capacity-building of young minds. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come, and ensure the overall progress of India.

### How can students utilize their time during lockdown?

✓ **Study ahead:** It would be very beneficial for students to get in touch with either their professors or seniors in college to acclimatize with the topics that are going to be covered or get any idea about what books to refer. Getting a start ahead on the studies will not only help them in keeping up with their curriculum but will also free up some time for students to make some new friends or do some extracurricular activities.

✓ **Enroll into online courses:** Students don't always have to be physically present in an educational institution to learn something. They can also take



up courses from the comfort of their home. Many institutions in India and abroad provide courses, tutorials and videos for a wide range of subjects online. Students can use this time to take up online courses.

Students can use this time to take up online courses and enhance the existing knowledge.

✓ **Learn a new language:** This is a skill that students can add to your CV as well. It can even open up new avenues in your career later on. Learning a new language has multiple benefits and is a fun experience. It needs focus and dedication as well. There are many websites and apps that offer language courses. Some of them even offer a certificate after you complete the course.



✓ **Learn a new skill:** Students can take this time to learn a new set of skills which will prepare them for not only the jobs they have ahead but will also help improve your resume and wider acceptability. There are a plethora of online courses which can be easily attended even in these difficult times. Students can choose to learn to code, to SEO/Google Analytics, personal finance planning, creative writing, and so much more.

✓ **Prepare for standardized tests:** As we have ample time at home, students should prepare for the entrance exams. Prepare with the help of mock tests, or quiz templates to familiarize with these tests.



## BATTLE OF DRONES AGAINST COVID-19



The COVID-19, a global pandemic that caused more than 350,672 deaths and infected more than 5 million people worldwide, make us rethink how governments, organizations, and societies around the world can work with minimum or without physical contact. Today, the frontline warriors and heroes of the nation are doctors, medical staff, local police, and private security guards and refuse collectors. Technologies like Artificial Intelligence, Big Data, GIS and Mapping, Location Technology and autonomous machines are playing a growing role in responding to COVID-19 pandemic. However, in this war against this invisible enemy, **DRONES** play a key role by helping authorities and people in different ways to prevent further spread of the coronavirus outbreak. Let's look at how drones are being used effectively to combat COVID-19.

### SURVEILLANCE



Due to this COVID -19, most countries took measures like the closure of non-essential public places, ban of mass gatherings and ensuring a social distancing to limit physical contact, to prevent the spread of the virus. However, in some areas where individuals are not complying with the restrictions knowingly or unknowingly. The introduction of drones at this time of crisis is reducing the risk of getting infected. The Police officials and other staff use drone which enables monitoring vast swathe of area without physical engagement.

### BROADCASTING



In addition to surveillance, Drones equipped with loudspeakers are used by the authorities to broadcast messages includes making public announcements to keep people indoors, take necessary precautions, make social-distancing, wear a mask if stepping outside from home and also the information about lockdown measures, especially an in rural area that lacks open communication channels for health information.

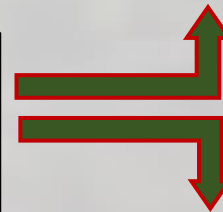
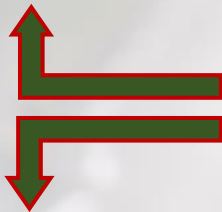
### DISINFECTANT SPRAYING



To disinfect public spaces and prevent the further spread of COVID-19, health authorities are deploying agriculture spray drones to carry out tasks like spraying disinfectant in potentially affected areas. These spraying drones are filled with disinfectants and can cover much more ground in less time and 50 times faster than traditional methods. These drones are easy to operate, inexpensive and can be quickly mobilized, in addition to reducing the risk of health and sanitation workers getting exposed to both the virus and the disinfectant.



Flying into the Future:  
 Drone Technology is a New EYE  
 in the SKY  
 - Robotics Business Review



Click the above image to watch the most Compact and Portable Drone, which is just 249 grams.

### MEDICINE & GROCERY DELIVERIES



Due to this COVID-19 Doctors and hospitals need medical supplies and laboratory testing more than ever, and drones are the safest and fastest ways to deliver medical supplies and transport samples from hospitals to laboratories. In Wuhan, the epicenter of the pandemic, a drone is used to deliver medical supplies in the hospital. This technology not only speeds up delivery of essential medical supplies and samples but also reduces the risk of exposure to medical staff and making a major difference in efforts to combat the disease.

### TEMPERATURE CHECK



During the peak of the epidemic in China, authorities were carrying out large-scale remote temperature measurement in most apartment complexes through the drones. Since people were worried of catching the infection, to avoid the face to face contact, Chinese authorities used drones equipped with infrared cameras to measure the temperature of people who was lockdown in their houses.

### MONITORING



In several countries including China, Germany, and the United States, empty fields have been converted into temporary hospitals to ease the pressure on hospitals that are already functioning at full capacity. Drones are helping governments in surveying those areas and build more efficiently and with minimal human involvement.



## COVID 19 VS AVIATION SECTOR

According to the World Bank Organization, in 2018, around 4.2 billion passengers were carried around all across the globe. Factors that were driving the aviation industry before the COVID-19 pandemic include increasing disposable income all across the globe, the introduction of low-fare airlines, increasing global economic activities, new travel trends, and many more.

The key factors affecting the aviation industry after the pandemic include the decline in tours and travels as a large number of international as well as domestic flights are getting cancelled all across the globe to curb the transmission of the virus. The government all across the globe are cancelling the visa of foreign people and locking down affected area which is also one of the major reasons behind the slowing down of the aviation industry.

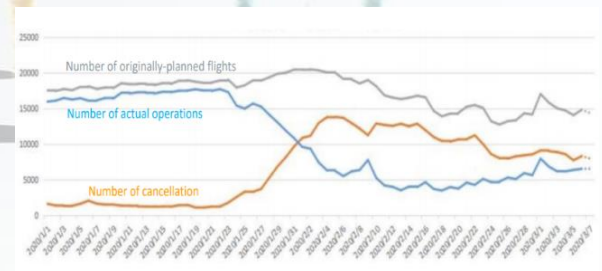
Key companies of the aviation industry that are getting affected globally include Qatar Airways, Emirates, China Eastern Airlines, Lufthansa, Boeing, Airbus, American Airlines Group Inc., and Delta Air Lines. Additionally, the company has also decided to scale back its operation which includes cutting flights and removing less economical aircraft. Qatar Airways grounded all its ten A380 aircraft until 31 of May 2020, as a precautionary measure of COVID-19 outbreak. Moreover, Emirates also halted most of its passenger operation as a result of the pandemic. Now, airlines and airport managing companies are seeking bailout packages from the government. Airport managing companies in Europe are expected to incur a loss of \$15.4 billion due to pandemic. It is estimated that airports in Europe will receive 700 million fewer passengers which are 28% less as expected earlier.

2020 forecasts – COVID-19 impact on travel and tourism sector

Region	Potential Total Job Losses (million)	Total GDP Loss (USD billion*)
Africa	-7.6	-52.8
Asia/Pacific	-63.4	-1,041.0
Europe	-13.0	-708.5
Latin America/Caribbean	-5.9	-110.2
Middle East	-2.6	-96.2
North America	-8.2	-680.7
<b>Total</b>	<b>-100.8</b>	<b>-2689.4</b>

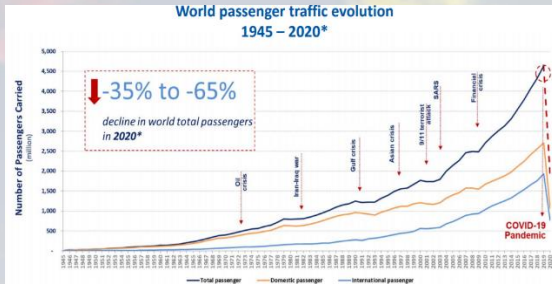
Effect of COVID-19 on the aviation industry can be observed in each region including North America, Europe, Asia-Pacific and Rest of the World. For instance, in the US, since the national health emergency due to the COVID-19 outbreak, most of the region is on complete lockdown, which is in turn restricting the domestic travel in the country. Countries such as Italy, France, Spain, and India are under complete lockdown and all kinds of flights are stopped until further notice.

The latest estimates indicate that the possible COVID-19 impact on world scheduled passenger traffic for the full year 2020, compared to Baseline (business as usual, originally-planned), would be: – Overall reduction ranging from 32% to 59% of seats offered by airlines – Overall reduction of 1,825 to 3,208 million passengers – Approx. USD 238 to 418 billion potential loss of gross operating revenues of airlines.



- ✓ **Air passenger traffic:** An overall reduction of air passengers (both international and domestic) ranging from 35% to 65% in 2020 compared to 2019 (by ICAO).

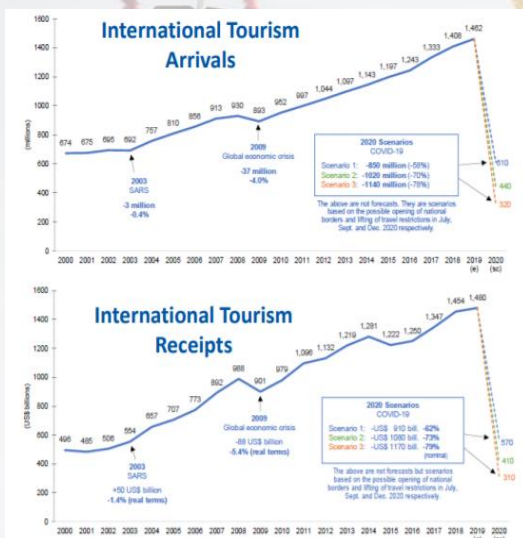
Region	Passenger number - both international and domestic for full year 2020		Airport revenue - both aeronautical and non-aeronautical for full year 2020	
	million and % change from 2020 "business as usual" baseline scenario		USD billion and % change from 2020 "business as usual" baseline scenario	
Africa	-114	-47.3%	-2.2	-51.2%
Asia/Pacific	-1,797	-52.9%	-29.4	-58.9%
Europe	-1,416	-57.1%	-37.1	-62.6%
Latin America/Caribbean	-289	-44.2%	-5.3	-50.5%
Middle East	-201	-46.9%	-7.0	-53.0%
North America	-859	-41.1%	-16.4	-47.3%
<b>Total</b>	<b>-4,676</b>	<b>-50.4%</b>	<b>-97.4</b>	<b>-56.7%</b>



✓ **Airports:** An estimated loss of over 50% of passenger traffic and 57% or over USD 97 billion airport revenues in 2020 compared to business as usual (by ACI).



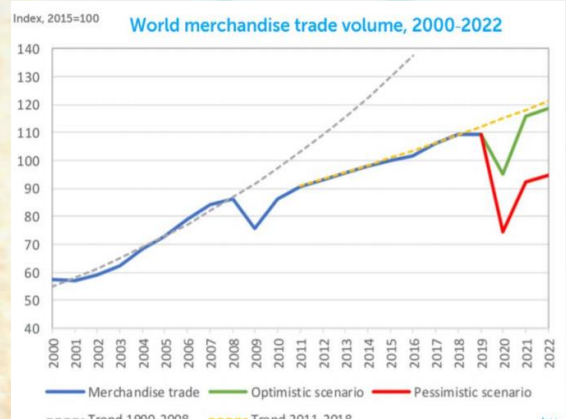
✓ **Tourism:** A decline in International Tourism receipts of between USD 910 to 1170 billion in 2020, compared to 1.5 trillion generated in 2019, with 96% percentage of the world wide destinations having travel restrictions (by UNWTO).



✓ **Trade:** Fall of Global merchandise trade volume by between 13% and 32% in 2020 compared to 2019 (by WTO).

GLOBAL SCHEDULED FLIGHT CAPACITY CHANGE		2019-2020										
		27 Jan	3 Feb	10 Feb	17 Feb	24 Feb	3 Mar	9 Mar	16 Mar	23 Mar	30 Mar	6 Apr
ALL		-0.2%	-3.8%	-9.9%	-22.2%	-46.6%	-72.6%	-87.6%	-92.6%	-95.2%	-97.2%	-98.2%
Germany		-0.2%	-3.8%	-9.9%	-22.2%	-46.6%	-72.6%	-87.6%	-92.6%	-95.2%	-97.2%	-98.2%
Spain		-14.5%	-3.8%	-2.5%	-0.6%	-1.6%	-1.4%	-2.9%	-13.2%	-74.3%	-88.5%	-92.6%
Hong Kong		-0.7%	-20.0%	-44.2%	-52.7%	-63.9%	-70.4%	-77.5%	-80.8%	-81.2%	-88.9%	-92.9%
UK		-5.7%	-4.3%	-4.0%	-3.0%	-1.9%	-2.7%	-15.0%	-38.3%	-53.5%	-75.6%	-90.7%
Singapore		-0.3%	-0.2%	16.4%	-18.5%	27.4%	25.4%	35.2%	35.5%	-76.9%	-90.8%	-99.9%
Italy		-12.6%	-4.3%	-3.5%	-2.3%	-0.2%	0.2%	-27.0%	-73.9%	-81.6%	-89.2%	-99.0%
France		-3.3%	-0.3%	0.6%	1.7%	-0.3%	-0.0%	-3.8%	-13.2%	-49.3%	-81.4%	-92.6%
UAE		-0.7%	-1.6%	-3.3%	-3.5%	-3.3%	-3.9%	-5.3%	-14.4%	-23.6%	-85.8%	-84.4%
Sweden		-17.0%	-5.7%	-5.4%	-6.4%	-4.9%	-4.9%	-6.4%	-14.3%	-63.3%	-77.9%	-84.3%
Australia		-3.8%	-3.6%	-5.0%	-7.2%	-2.5%	-4.7%	-2.3%	-0.2%	-15.8%	-63.8%	-78.7%
India		1.2%	1.9%	6.2%	10.8%	6.7%	9.9%	10.0%	8.3%	1.0%	-68.0%	-73.7%
South Korea		1.4%	-3.4%	-2.1%	-11.1%	-17.0%	-24.4%	-27.0%	-36.5%	-51.7%	-81.6%	-89.3%
China		25.5%	-23.2%	-63.3%	-76.8%	-82.3%	-81.6%	-44.9%	-28.2%	-23.5%	-45.8%	-65.8%
U.S.		3.2%	1.5%	1.3%	1.5%	0.6%	-2.9%	-1.5%	-0.5%	-4.8%	-13.0%	-45.2%
Japan		2.1%	-0.8%	-3.2%	-4.6%	-5.6%	-7.6%	-15.0%	-19.2%	-24.9%	-72.0%	-93.0%

✓ **Global Economy:** A projected 3% contraction in world GDP in 2020, far worse than during the 2008-2009 financial crises (by IMF)



*We are just locked, not caged.  
 Lets hope than to despair*



## PIA A320 CRASH LANDED IN MODEL COLONY



Click the image to see the CCTV footage of the PIA 8303 Crash Landed.

PIA(Pakistan International Airlines) plane flying on board with 91 passengers and 8 of its crew members from Lahore to Karachi, had a falling headlong in the model colony near the Jinnah International Airport at 2:30 pm(local time) on 23 May 2020 Friday.

Rescue crews have retrieved **“THE BLACK BOX”** from PIA (PK 8303) at the crash site in the southern Pakistani city of Karachi on Saturday. In the history of Airbus, this is one such rare cases of A320’s crash. Since there is a lot of speculations going regarding the crash of the flight PK 8303 is attributable to a pilot error or a technical glitch.



This incident came days after Pakistan allowed commercial flights to resume after the country’s pandemic lockdown was eased. Problem of grounding of planes for the 2 long months, will require a test fly without any passengers on board to ensure that they are fit enough to ferry travelers. But failed to do so instead they had a routine inspection of the plane before takeoff.

### BUT WHAT’S ABOUT THE REAL TECHNICAL ISSUE?

The Airbus A 320’s engines had scraped the runway thrice the pilot’s first attempt to land, causing friction and sparks. After the third impact, the pilot took the aircraft off into the air again, which officials found very strange as the crew in the cockpit did not inform the Air Traffic Control(ATC) any problem with landing gear.

Since the automated emergency systems within the aircraft go off in case of any emergency, and the loud alarms and warnings are impossible to ignore, there was no indication from the pilot to the ATC that something was a mess.



Click the image to hear the Cockpit recording of the PIA 8303 recorded in the Black Box.

When the aircraft scraped the ground on the first failed attempt at the landing, the engines oil tank and fuel pump may have been damaged and started to leak, preventing the pilot from achieving the required thrust and speed to raise the aircraft to safety.

The pilot made a decision “on his own” to undertake a “go-around” after he failed to land first time. ATC was informed that landing gear was not deploying during go around. Then the pilot was directed to take the aircraft to 3,000 feet, but he managed only 1,800. And still tried to 3000 feet.

The failure to achieve the directed height indicates that the engines were not responding. The aircraft tilted and crashed suddenly. “The plane descended too fast, almost plunged”. This resulted in loss of lives of 97 people on board, luckily 2 of them were alive, and also created a impact in the residential area in which 11 people were injured. It is too rare to have so many technical problems at the same time which includes emergencies, malfunctioning, engine failure or fire.

There are more questions than answers with most serious being why and how the alarm system inside the cockpit failed to warn the pilots of an impending emergency. Real reason behind the crash will take some time to be zeroed upon.

### PAK PLANE CRASH IS A SERIOUS WARNING FOR WORLD’S AVIATION SECTOR?????????

Sujithra P,  
III Year,

2017-2021 Batch,

Department of Aeronautical Engineering.



## NEW ERA TO HUMAN SPACEFLIGHT

*This is the new generation, a new era in spaceflight*

-Jim bridenstine, NASA Administrator

It's the big milestone for **SpaceX** as part of NASA's Commercial Crew Program. The experimental initiative tasked private companies with creating new spacecraft for NASA that are capable of transporting astronauts to and from the International Space Station. SpaceX's contribution to the program is a sleek, gumdrop-shaped capsule called the **Crew Dragon**. While it's flown a few times before, this is the first time for the capsule to carry humans to space. However it will cost \$55 million (estimated).



SpaceX spent the last six years getting to this point. Last year, the company did a full dress rehearsal, successfully launching the Crew Dragon to the station without a crew on board. The company also tested the capsule's emergency escape system, confirming that the Crew Dragon can carry people to safety if something goes wrong during the launch.

As of Airforce's 45<sup>th</sup> space wing forecast that the launch has a 40 percent probability, given weather consent, which includes rain and thick cloud. With two and half hours to go, the astronauts **Douglas Hurley (53)** and **Robert Behnken (49)** have strapped into their seat in crew dragon and began checking that all systems were good to go. Then with just under two hours until launch, the hatch to the spacecraft is closed. SpaceX began its loading the rocket with fuel 35 minutes before launch which will initiate a final series of processes and checks.

Now, the mission, called Demo-2, lifted off two NASA astronauts on board, from Pad 39A at the Kennedy Space Centre in Cape Canaveral, Florida, at 4:33 pm EDT (2033 GMT or 2:03 am IST) on 27 May 2020. Unfortunately the launch was cancelled due to poor weather at Florida and rescheduled at 12:52am.

on 31<sup>st</sup> May 2020. The second launch was successful and the Crew Dragon with those two Astronauts has successfully docked with the ISS (International Space Station) and continuing their research works.

### Crew Dragon:



It is a human-rated capsule capable of ferrying up to seven astronauts, and **Cargo Dragon**, an updated replacement for the original Dragon spacecraft. Crew Dragon is equipped with an integrated launch escape system in a set of four side-mounted thruster pods with two Super Draco engines each. Crew dragon with its trunk stands just under 27 feet tall and 13 feet around. The trunk is the large lower half that covers solar panels, which can carry cargo. The spacecraft features redesigned solar arrays and a modified outer mold line compared to the original Dragon, and possess new flight computers and avionics.

According to NASA, the specific mission duration will be determined once on station based on the readiness of the next commercial crew launch. As of now, NASA decided to extend Behnken and Hurley's stay on board in order to maintain a bigger crew on the ISS. It seems likely they'll be up in space for a few months, though NASA hasn't decided yet, when the astronauts will return. The Crew Dragon can only stay in space for about four months because of its solar panels. The thin atmosphere in space degrades the panels over time, limiting the vehicle's lifetime in orbit.

Vidya R,  
III Year,

2017-2021 Batch,

Department of Aeronautical Engineering.



## MYSTERIOUS SOUND IN BENGALURU AIRSPACE

The loud sound was heard in Bangalore exactly on Wednesday dated 20.05.2020. People at Bangalore thought that the unusual sound could be a thunder or other natural calamities or could be a sign that is indicating a destruction which is going to happen later.

Finally it was revealed which puzzled lakhs of city dwellers, was revealed to have emanated from an IAF test flight involving a supersonic profile. The sound effect caused due to such high-speed flights is known as 'sonic boom'.



In a statement, the Ministry of Defense's PRO in Bengaluru said, **"The sonic boom was probably heard while the aircraft was decelerating from supersonic to subsonic speed between 36,000 and 40000 feet altitude."** It confirmed that the aircraft belonged to the **Aircraft Systems and Testing Establishment (ASTE)** and had flown in allocated airspace outside city limits.

Explaining the unusual sound heard in the city, the Training Command headquarters of the Indian Air Force, said in a separate statement, **"These (test flights) are done well beyond the city limits in specified sectors. However, considering the atmospheric conditions and reduced noise levels in the city during these times, the aircraft sound may become clearly audible even if it happened way out from the city."**

### WHAT IS SONIC BOOM ?

Sound travels in the form of waves which are emitted outwards from its source. In air, the speed of these waves depends on a number of factors, such as the temperature of the air and altitude.

This is also the cause of the Doppler effect— in which bunched waves at the front appear at a higher frequency to a stationary observer, and spread out waves that are behind are observed at a lower frequency. As long as the source of the sound keeps moving slower than the speed of sound itself, this source— say a plane — remains nested within the sound waves that are travelling in all directions.

When an aircraft travels at supersonic speed — meaning faster than sound (**>1225 kmph at sea level**) — the field of sound waves moves to the rear of the craft. A stationary observer thus hears no sound when a supersonic flight approaches, since the sound waves are at the rear of the latter. At such speeds, both newly created as well as old waves, are forced into a region at the aircraft's rear called a **'Mach cone'**, which extends from the craft and intercepts the Earth in a hyperbola-shaped curve, and leaves a trail called the **'boom carpet'**. The loud sound that is heard on the Earth when this happens is called a 'sonic boom'. When such aircraft fly at a **low altitude**, the sonic boom can become **intense enough to cause glass to crack or cause health hazards**. Overland supersonic flights have thus been banned in many countries.





## STARFIRE

*The stars shall not rock me to sleep ,  
For the sky has summoned me ,  
To ride off with the clouds ,  
For a land beyond the mountains .  
The land of my birth is under siege ,  
Warplane awaits for the hunter ,  
We shall conquer the sky one last time ,  
I take off with the roar of her engines ,  
A ballad worth millions of bonfires ,  
As she rolls and glides past the foes ,  
Like a meteor that fell from grace ,  
To avenge her fallen comrades ,  
As we enclose our prey for glory ,  
One last hunt , Before we  
Return to the stars – our origin ,  
My beloved Starfire .*





## SPACE DEBRIS: UNWANTED FLOATING OBJECTS IN SPACE



### “Too much of anything is good for nothing”.

We should have heard this proverb once in our lifetime. Likewise, too much of space debris i.e. the space junks are orbiting around the earth. An estimated 100 million pieces of space debris is orbiting in the earth's orbit. So, it's essential to clear space debris, in order to proceed future space programs.

### WHY REMOVAL IS IMPORTANT?

The space debris, also called as space junk, are artificial materials that is orbiting earth but is no longer functional. This material can be as large as a discarded rocket stage or as small as a microscopic chip of paint. Much of the debris, is within **2000 km (1200 miles)** of earth's surface; however, some debris can be found in **geostationary orbit i.e. 35,786 km (22,236 miles)** above the equator. As of 2020, the United States Space Surveillance Network was tracking more than **14,000** pieces of space debris is larger than **10 cm (4 inches)** across. It is also estimated that there are about **200,000** pieces between **1 and 10 cm (0.4 and 4 inches)** across and that there could be millions of pieces smaller than **1 cm**. How long a piece of space debris takes to fall back to earth depends on its altitude. The amount of space debris in space threatens both crewed and un-crewed spaceflight. The risk of a catastrophic collision of a space shuttle with a piece of space debris was **1 in 300**. So the space agencies need to take a step before proceeding their respective future space projects.

### MEASURES TAKEN:

- ✓ Burning up all the fuel in a rocket stage, so it does not explode later or saving enough fuel to deorbit a satellite at the end of its mission. The British satellite **RemoveDEBRIS**, which was launched in 2018 and deployed from the ISS, tested two different technologies for removing space debris: capture with a net and capture with a harpoon (spear like instrument). **RemoveDEBRIS** also attempted to test a drag sail to slow down the satellite so that it could re-enter the atmosphere, but the sail failed to deploy. Satellites in geostationary orbit that are near the end of their missions are sometimes moved to a “graveyard” orbit i.e. 300 km (200 miles) higher.
- ✓ A little spacecraft could soon make a big contribution in the fight against **space junk**. Researchers are developing a clean-up CubeSat called **OSCaR** (Obsolete Spacecraft Capture and Removal), which would hunt down and de-orbit **debris** on the cheap using onboard nets and tethers.
- ✓ **ClearSpace-1** will be the first **space mission** to remove an item of **debris** from orbit, planned for launch in 2025. The **mission** is being procured as a service contract with a start-up-led commercial consortium, to help establish a new market for in-orbit servicing, as well as **debris** removal.

Therefore, more concentration should be given on clearing this space debris; otherwise, there will be more collisions of existing space debris and the collision between rockets may happen in future.

### CONCLUSION:

“**The largest garbage dump of our earth**” is in the outer space. If we can able to clear the space debris as soon as possible, we can continue our space missions more conveniently. Otherwise, there will be a total weakening of our telecommunications systems, resulting in total blackout of our telecommunication; also, satellite launching will be a challenging factor in future days.

“**It always seems impossible until it's done**”.

So, we will hope for a brighter future without space debris, by a wonderful idea to minimize it.

Anto Snowfen S,  
II Year,  
2018-2022 Batch,

Department of Aeronautical Engineering,



## ISRO BRINGS NOLAN'S DREAM TO REALITY



It was in the year 2014 when Christopher Nolan's space odyssey "Interstellar" was screened. As it inspired many, it also inspired me. One piece of technology he dreamed back then was TARS. I was baffled by the range of tasks it could perform right from piloting the craft to auto-docking other ships etc. For those who have watched the movie would know the important role TARS played in the movie. Now let's fast forward to 2020. It was January 22<sup>nd</sup> when the news of Vyom Mitra hit the talks nation wide gathering the interests of space enthusiasts all around the country. When it reached my ears, I went to the internet and read about it. I was surprised as on that day the Indian Space Research Organization (ISRO) brought the dream of TARS to reality with a humanoid space faring robot called Vyom Mitra.

I am quite sure all of you would, at some point of time in life read about 'Laika' the first dog in space. ISRO, instead of sending such animals into space they designed Vyom Mitra to be a part of un-crewed space flight mission aboard Gaganyaan, India's crew orbital space craft to understand the weightlessness and radiation effects on human body in micro gravity. I could not help but admire the humane nature of our scientists at ISRO, treating all lives with respect and not risking them like other nations on the space race.

When it comes to Gaganyaan's manned mission, this piece of technology would be helpful for the crew,

crew, taking care of the environment control and life support system, handle switch panel operations and also provide necessary warnings in both English and Hindi.

I here by conclude by saying, whether fiction or real, such an amazing piece of technology such as Vyom Mitra will be an important driving factor in future space odyssey of not only India but also for any other major country of the world.

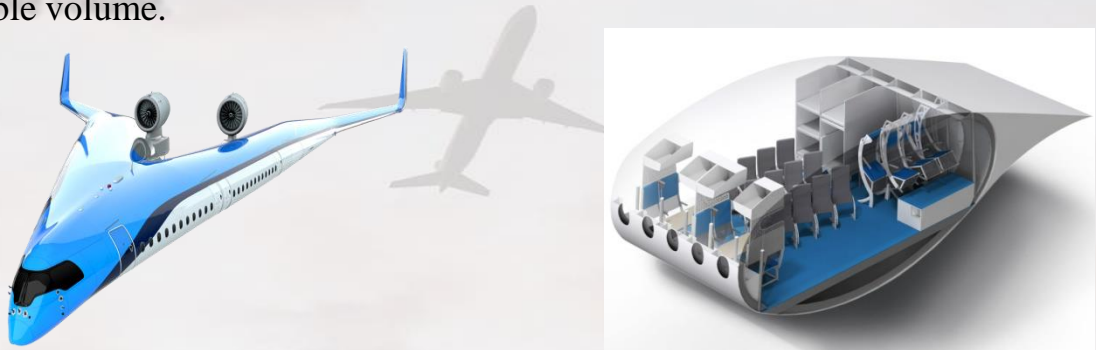


**Click the above image to explore more about Vyommitra**



## FLYING - V

Some music enthusiasts may think about guitar after reading this title, but it's an airplane. The Flying-V aircraft model is being developed with the collaborations of TU Delft, Airbus and KLM. The Flying-V is one of the research into making aviation more sustainable by reducing carbon emissions. The Flying-V is a radically new and highly energy efficient design for long distances flight. The design is not as long as A350, but it maintains same wing span and it is compatible with present gates and runway layouts at airports and accommodates the same number of passengers. It consumes 20% less fuel than conventional aircrafts due to improved aerodynamic shape and reduced weight and drag. It doesn't have separate empennage and -3 deg angle of attack is attained during approach. It has less inflow surface area compared to the available volume.



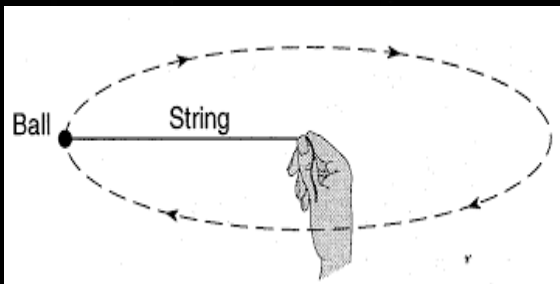
The growing demand for the premium economy segment has led designers to focus on turning economy segment travel into a pleasurable experience. Generally, fuel is stored in wings of the aircraft. But, this aircraft's design integrates the passenger cabin, the cargo and the fuel tanks in the wings, creating a spectacular V-shape. This model features four kinds of seating – individual, lounges, group seats and collapsible beds. Although, the aircraft won't be available for commercial purposes for the next 20 to 30 years, still the works will be in progress for providing other forms of propulsion to make it more efficient.

**The future looks even more revolutionary.**

**“Focus on the journey, not the destination.”**

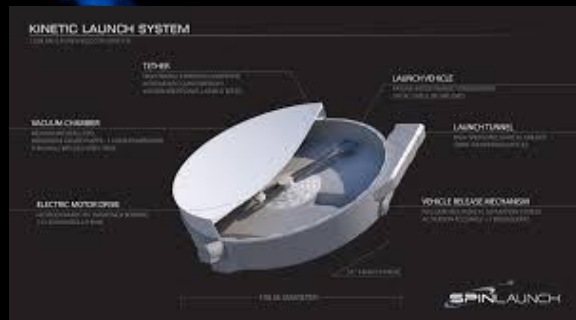
## SPIN LAUNCH

What if instead of blasting cargo into space on a rocket, we could fling it into space using a catapult? That's the big, possibly crazy, possibly the brilliant idea behind Spin Launch. It was confidentially implemented in 2014 by Jonathan Yaney. the idea of the spin launch team is to create a cheaper and sustainable way to get the payload from earth into space without chemical propellant. Using a catapult tech would side step the heavy fuel and expensive rocket booster.



The basic principle of the Spin Launch is the usage of the Centrifugal Force in the most possible useful way

The Team Spin Launch plans to use rotational acceleration method, harnessing angular momentum to gradually accelerate the vehicle to hypersonic speeds at an incredible rate of around 3000 m/s (mach 8.76), at vaccum to reduce the drag formed due to shock formation. The potential challenge could be air resistance upon the cargo when the catapult fires. Earth's atmosphere is so dense that it could be like the cargo was hitting a brick wall upon ejection. Any electronics or other sensitive materials should be engineered to withstand intense G-forces. This explains the pointy aerodynamic launch vehicle shown in the figure.



Spin Launch is targeting a per launch price of less than \$500,000, while all the existing rocket based companies cost between \$5 million and \$100 million per launch.

## \$121,000 CESSNA 152

This is quite possibly the single nicest and most expensive Cessna 150 the world has ever seen at a mind-blowing USD \$121,000. For context, its rare to see a 150 priced above about \$40-\$50K, even with an upgraded engine and a nice panel.



### SO, WHAT MAKES THIS ONE SO EXTREME??

Well, it appears to be the most perfect 150 you'll ever find. It was the fifth 150 produced; it rolled off the line in 1958, and has flown a total of 3500 hours since then. According to an older listing, the owner who is currently selling it had it repainted in 2013 and then performed a full restoration in 2014. The summer, it won the "Outstanding in Type" award at Airventure 2014. Photos from that year indicates it had, at that time already been modified with the tail wheel conversion and 150hp Lycoming O-320 engine upgrade.



For some unknown reason, the owner then elected to have it repainted another time, replacing already nice black and white paint with a swooped red and black scheme. This seems a bit odd to me, as the existing paint was brand new and pretty sharp. It makes me wonder that motivated him to spend the additional 20K to repaint it a second time.



### OSHKOSH AWARD WINNER • \$121,000 • FOR SALE BY PROUD

**OWNER** • Absolutely PERFECT 1959 Cessna 150 Taildragger with 150HP Lycoming O-320. 3500 hours TTAF and 100 hours TT engine and prop. This airplane was the 5th Cessna 150 produced (serial number 5) and rolled off the line in Nov 1958. This airplane was painstakingly restored/updated and includes STC's for the taildragger conversions, 150HP engine and 40 gallons of fuel. World class black leather interior with 4 point harnesses. Paint is absolutely perfect! Panel includes Garmin G3X Touch with Sirius XM weather and dual G5's. GNX 375 IFR GPS and xponder w/ADS-B compliance. GNC 255 Nav/Com. Call/Text. • Contact [Stephen Swensen](#), Owner - located Kaysville, UT United States • Telephone: 720-620-1010 • Posted May 11, 2020 • [Show all Ads posted by this Advertiser](#) • [Recommend This Ad to a Friend](#) • [Email Advertiser](#) • [Save to Watchlist](#) • [Report This Ad](#) • [View Larger Images](#)



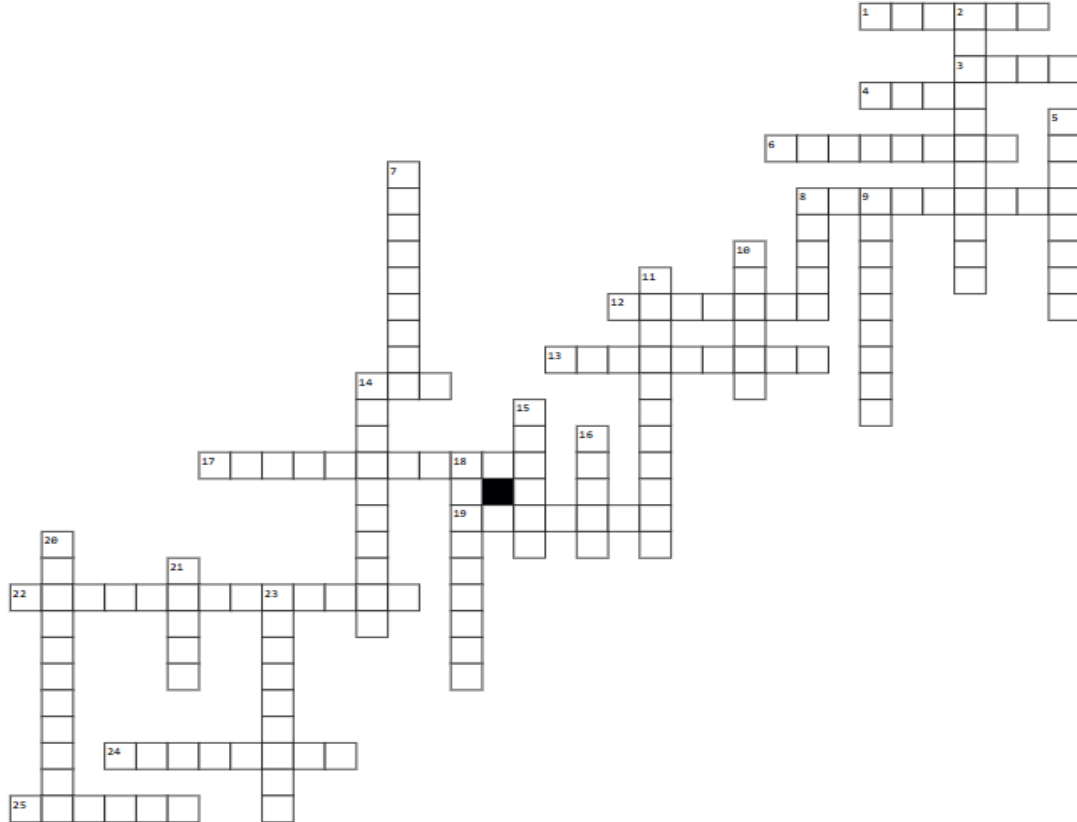
Whatever the reason, he also spent a fortune on the panel, removing every last steam gauge and harmonizing the ever-living hell out of it with a G3X touch, dual G5s, and a GNX375. It's sobering to think that those three main displays together cost about as much as the airplane. It's a beautiful panel, though, I'd love to know how much weight was saved by ditching the vacuum system and old instruments.

In the end, you've got an airplane that, while extremely limited in payload, can get into and out of nearly any airstrip with ease and that's in factory-fresh condition. Its safe to say there is no finer 150 anywhere on the planet. But I think for most, it would be wiser to spend 2/3 this price on a nice 180hp 170B that can carry multiple adults and their bags in comfort.

Sure, it wouldn't be one that's been as meticulously restored, but then again, I suspect the \$40K stuffed into your pocket would make you feel just fine about that. What do you think – is the \$120K price **INSANE** or **JUSTIFIED??**



## CROSSWORD FUN WITH AVIATION



### ACROSS:

1. Ratio of mass flow rates of two streams ?
3. Role of aileron ?
4. In straight-and-level, unaccelerated flight, the sum of opposing forces acting on the aircraft is always ?
6. In aircraft propulsion the most widely used engine is?
8. Age to get PPL license ?
12. First man to enter space ?
13. Tail assembly of an aircraft ?
14. Part which give the wing its cambered shape and transmit the load from the skin and stringers to the spars ?
17. Wing commander held captive in Pakistan for 60 hours after his aircraft was shot down in an aerial dogfight ?
19. UAV bags gold in drone Olympic in Bangalore ?
22. Acute angle between the chord line of the wing and the direction of the relative wind is the ?
24. Supersonic passenger aircraft ?
25. An aircraft that is designed to fly without an engine ?

### Down:

2. Study or practice of travel through air ?
5. Number which is the ratio of inertial force to viscous force ?
7. Airfield at Arakkonam ?
8. Chief director of ISRO during Chandrayan 2 mission ?
9. Lady robot which will accompany astronauts in Gaganyaan mission ?
10. Shock which is perpendicular to the flow ?
11. Founder of jet airways ?
14. Oldest airline in the world ?
15. Airline invented business class ?
16. The rate at which the temperature decreases with increase in altitude ?
18. Largest airport in India situated in \_\_\_\_ ?
20. \_\_\_\_force which is the principle of spin launch ?
21. The landing gear of an aircraft that uses two or more tandem wheels connected by a central strut ?
23. Removing the cowl from the fan gives us ?

Click here to  
View the Answers

Subeetsha B,  
III Year,

2017-2021 Batch,

Department of Aeronautical Engineering.



## DEPARTMENT ACTIVITIES



Aero-Modelling Workshop conducted for the School Students in the Open Day 2020 on 04 Jan 2020.



Field work on Real Time data collection from UAV for Project on Rice disease detection using Image Processing at Traditional Seed Conservation Centre(CIKS), Sukkakollai, Villupuram District on 01 March 2020.



Guest Lecture on Flight Safety by "Ravi R" (Former Wing Commander in IAF), Blue Dart Aviation, conducted for all the students in Aero Department on 06 Jan 2020.



Glider & Water Rocketry Workshop conducted for the I Year of Aero Department students (2019-2023 Batch) on 24 Feb 2020.



## Guest Lectures:

- Guest lecture on “*Life at Ford Motors*” by **Mr. G. Rajkumar**, Ford Automobiles. All the 157 students from the department have attended on 03 Jan 2020.
- Guest lecture on “*Life at Hyundai Motors*” by **Mr. Saravanan R**, Hyundai Motors. All the 157 students from the department have attended on 03 Jan 2020.
- Guest lecture on “*How to Startup business*” by **Mr. Aravindh V**, Entrepreneur . All the 157 students from the department have attended on 03 Jan 2020.
- Guest lecture on “*Propulsion and Research Activities at IIT, Madras*” by **Dr. K. Jayaraman**, Principal Project Officer, NCCRD, Department of Aerospace Engineering, IITM . All the 169 students from the department have attended on 28 Jan 2020.
- Guest lecture on “*Job opportunities at Indigo Airlines*” by **Ms. Shyleshwari S R**, Indigo Airlines. All the 55 students from the final year of the department have attended on 29 Jan 2020.
- Guest lecture on “*Aerospace Strategy and IAF*” by Air Marshal M Matheswaran. All the 207 students from the department have attended on 19 Feb 2020.

## Events:

- **AVION'20 National Level Technical Symposium** has conducted by the department with a maximum participation of 50 students from various colleges on 06 Jan 2020.
- **Electric Vehicle Workshop** has conducted by the partnership with Aero & Auto Department with a maximum participation of 90 students during 08 Jan 2020 to 10 Jan 2020.
- Aero Department participated in **Open day** organized by the institute on 04 Jan 2020.

## Students Achievements:

- **Mr. Praveen Kumar TR and Mr. Vinoth S** from IV Year(2016-2020 Batch) has secured 1<sup>st</sup> place in the **IPC iQuest'20** by presenting a paper titled, “*Monitoring and diagnosis of paddy disease using UAV*” on 28 Feb 2020.
- **Mr. Shrinivasan N, Mr. Sivapraksh S & Mr. Srinath B** from II Year (2018-2022 Batch) has secured 3<sup>rd</sup> place in the **IPC iQuest'20** by presenting a paper titled, “*THE SCRUBDRONE*” on 28 Feb 2020.

- **Ms. Nithya R**, II Year (2018-2022 Batch) has secured the “**Runner Up**” position in the **State Level Tournament** at **S.A Engineering College** on 21 & 22, Feb 2020.
- **Mr. Kishanth BY**, III Year (2017-2021 Batch) has secured “**Gold**” in **Shot-Put** & “**Bronze**” in **Discuss Throw** in the **State Level Inter-Collegiate Tournament** at **VIT Vellore** on 13 & 14 Feb 2020.
- **Mr. Rohit Sanjay G**, I Year (2018-2022 Batch) ) has secured the “**Runner Up**” position in the **State Level Inter-Collegiate Tournament** at **SASTRA University** on 07 Feb 2020.

## Knock the Lockdown with Webinars:

- Webinar on “*Introduction to Rocket Systems Integration*”, by **Mr. Venkat Athmanathan**, Graduate Research Assistant, Maurice J. Zucrow Laboratories, Purdue University on 05 May 2020.
- Webinar on “*Unsteady Force Measurements*” by **Dr. Nithiyaraj Munuswamy** Ph.D. IISc Bangalore, Engineer-ESI Group, on 07 May 2020.
- Webinar on “*Unsteady Force Measurements - Time based statistics in Fluid Flows*” by, **Dr. S K Karthick**, Post Doctoral Fellow, Faculty of Aerospace Engineering, Technion-Israel Institute of Technology, Haifa, Israel on 15 May 2020.
- Webinar on “*Wake Transition and Laminar Separation bubble on Flow Past an Eppler 61 Airfoil*” by, **Mr. Jawahar Sivabharathy**, Research Scholar in Department of Aerospace Engineering, IIT Kanpur on 22 May 2020.
- Webinar on “*Experimental Techniques in Aerodynamics – Particle Image Velocimetry (PIV)*” by, **Mr. Deepak Prem Ramaswamy**, Ph.D. Researcher at RWTH Aachen University, Germany on 23 May 2020.
- Webinar on “*Introduction to Digital Marketing*” by, **Mr. Manoj Sharath Nandakishore**, Manager-Digital Marketing and Branding, URBANTOUCH Urban Clothing Co., on 28 May 2020.
- Webinar on “*Design and Testing Considerations of Engine Rigs*” by, **Ms. Nithiah Srinivasan**, Design Engineer, FFT Deutschland GmbH, Florida Turbine Technologies Deutschland, Germany on 29 May 2020.



## Farewell to the Moon

Eugene Cernan was the last of only 12 men to have left their footprint on the lunar surface



**The A380 requires  
530 km of wiring  
and  
3600 litres of paint.**

## DID YOU KNOW?

### Most visited bodies by spacecrafts

Moon	66
Mars	32
Venus	26
Sun	14
Jupiter	7
Halley's Comet	5
Saturn	4
Mercury	1
Neptune	1
Uranus	1

**THE FORMULA ROSSA, A ROLLERCOASTER  
IN FERRARI WORLD, UAE REACHES  
A TOP SPEED OF 241 KMPH / 150 MPH.**

## OUR CREW

### Chairman

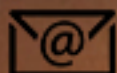
**Dr. Yogesh Kumar Sinha**  
HOD Aero

### Coordinator

**Mr. Surendra Bogadi**  
Assistant Professor, Aero

### Student Coordinators

**Surendar Kumar V**  
**Subeetsha B**  
**Mohamed Rafath R**  
**Sujithra P**  
**Manikandan S**  
**Anto Snowfen S**  
**Vignesh K**  
**Bharanidharan K**  
**Naveen B**



[surendrabogadi@rajalakshmi.edu.in](mailto:surendrabogadi@rajalakshmi.edu.in)



**+91 80562 76047 / +91 6383 026 125**



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**Brief about Activates carried out by ATRIUM, DEBATING UNION YRC,  
ROTRACT, YUVA**

Title of the activities	Organising unit/ agency/ collaborating agency	Number of teachers coordinated in such activities	Number of students participated in such activities
Covie-19 awarness	NSS	1	6
Mime act	NSS	1	6
Food and Mask Distribution for needy during Covid-19	NSS	1	10
One Plant Movement	NSS	1	50
Kidzrun- Volunteering	NSS	1	50
uzhavarapani at masilamaneeshwarar sivan temple	NSS	1	50
uzhavarapani at masilamaneeshwarar sivan temple	NSS	1	50
Makkal Eyakkam and NSS REC-Cleaned clanal	NSS	1	100
Magizham Voluntary Organization – Tree plantin	NSS	1	50
Temple Cleaning	NSS	1	50
Uzhavarapani in Kanchipuram Pavala Vanna Perumal temple tank	NSS	1	200
Tree plantation event on 30.09.2018 at Mahindra world city Maraimalai nagar	NSS	1	250
First Aid training by ALERT Team on 11.09.2018 and 12.09.2018, 400 NSS Volunteers participated.	NSS	1	400
Temple cleaning activity on 21-09-2018 at Maharal village Cheyyar, 50 NSS volunteers participated.	NSS	1	50
Energy Conservation rally conducted on 14.12.18.	NSS	1	100
NSS volunteers participated in prime minister talk on Pariksha Pe Charcha 2.0 live program on 29.01.2019	NSS	1	50
Seed ball Making on 28-07-2019, Mar Gregorios College, West Mogappair, Chennai-37.	NSS	1	50

Kesava Perumal Temple @ Paagasalai Village in Tiruvallur, Perambakkam on 09-02-2020	NSS	1	50
Karka Kasadara	Rotract	1	13
preSERVE	Rotract	1	10+
Kruthangya 4.0	Rotract	3	40+
Project IRIS	Rotract	1	20+
Project Elayne	Rotract	1	20
RYLA Vannam	Rotract	2	12
Urayaadal Aarambam	Rotract	1	20
HOPE VIsit	Rotract	1	15+
Enle Makkale	Rotract	1	20+
Open MIC	Rotract	1	35
Traffic Awareness Program	YRC	1	103
DAAN UTSAV	YRC	1	15
Disaster Management Training Program	YRC	1	122
UTHIRA 2K'19	YRC	1	700
Mega Tree Plantation Drive	YRC	1	15
Arodesh - Webinar on Mental And Physical Health	YRC	1	101
Pongal Celebration At Anaikum Karangal	YRC	1	14
Back To School	YRC	1	35
Know the Aid	YRC	1	155
Introduction And Brainstorm session	YRC	1	45



*S. V. Praveen*

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THANDALAM, CHENNAI - 602 105.

## Activity reports

<p>ATRIUM</p>	<p>The Student council of Atrium has played a major role in helping students master the art of communication and conquering stage fright. Atrium also helps host other major events and sends it's members for cultural events of our college and other college's alike. We also represent an interactive English and art community. We often do collaborations with other clubs(debate /writing/drama) . On an annual basis we host WoW, which is a inter college English and college events. The club and it's council seek to have a close relationship with its members and has been doing so since it started.</p>
	<p>Atrium Reports:  <a href="https://drive.google.com/drive/folders/1XChZGCyxM2uk22aEVxjhW9VqnwyRTJkq?usp=sharing">https://drive.google.com/drive/folders/1XChZGCyxM2uk22aEVxjhW9VqnwyRTJkq?usp=sharing</a></p>
<p>DEBATING UNION</p>	<p>Debating Union organised debates online through Google Meets on various occasions to help the students keep their debating skills polished and tournament ready. These meetings are two hours long and the motions vary from human rights, politics, psychological warfare, moral dilemmas to light-hearted fiction controversies. Other than just debating meetings, theoretical classes regarding the nuances of debating were also conducted. We also conducted comprehensive training sessions for the students attending the tournaments.</p>
	<p>Debating Union Reports:  <a href="https://drive.google.com/drive/folders/1IfsbwAIOG2yFu_5TLVZnTLPyKxaHIYhS?usp=sharing">https://drive.google.com/drive/folders/1IfsbwAIOG2yFu_5TLVZnTLPyKxaHIYhS?usp=sharing</a></p>
<p>ROTRACT</p>	<p>The Rotaract Club is a global movement of like-minded youngsters, who come together to rid the world of its most pressing issues, and have fun whilst doing so. We are, quite literally, defined by our actions.          The Rotaract Club of Rajalakshmi Engineering College was initiated in the year 2011 and is sponsored by the Rotary Club of Chennai K. K. Nagar.          The legacy of the club spans longer than a decade, and includes multiple successful projects.</p> <p>Rotaract Club Reports: <a href="https://drive.google.com/drive/folders/1mRHG868wxWUiVSVdZ9lz-B5ypsn_-fgX?usp=sharing">https://drive.google.com/drive/folders/1mRHG868wxWUiVSVdZ9lz-B5ypsn_-fgX?usp=sharing</a></p>

YRC	<p>YRC is a part of Red Cross Society is made up of young people. Young volunteers can make a significant contribution to meeting the needs of the most vulnerable people within their local communities through Red Cross youth programme To make them understand and accept civic responsibilities, and act accordingly with humanitarian concern.</p> <p>To enable the growth and development of a spirit of service and sense of duty with dedication and devotion in the minds of youth.</p> <p>To foster better friendly relationship with all without any discrimination.</p> <p>Encourage community service through training and education.</p> <p>Disseminate the seven fundamental principles of Red Cross and Red Crescent movement through activities that encourage the Red Cross ideals.</p>
YUVA	Yi YUVA conceived with the vision to synergize students and their energy for positive action.
	Yi YUVA engages students in SELF-DEVELOPMENT, SKILL BUILDING, COMMUNITY SERVICE & NATION BUILDING activities.
	Yi YUVA gives exposure to students in various Yi events/ initiatives so that the students learn to conceptualize, plan and execute.

Note:-

The detail activity photo / documents evidence available with the google sheet link below.

<https://docs.google.com/spreadsheets/d/1mTDqc11qwNeQIcZxHrXjcHey37FGmOQEDWFiH6D0Zis/edit#gid=321062969>



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THANDALAM, CHENNAI - 602 105.



List of Committee Members

S.NO	DETAILS	CO-ORDINATOR	MEMBERS
1.	ANTI-RAGGING COMMITTEE	Dr. S. N. Murugesan Chairman & Head of the Institution	<p>Mr.I. Philip Praveen- Dean of Student Affairs Mr. G.Venkatesan - Tahsildar Mr. K.Rajangam - Inspector of Police Mr. R.Devendran - Senior Journalist, Thanthi TV Ms.A.Vijayalakshmi - Member, Yuva Sakthi Dr.M.Subbiah - Professor/ EEE Mr. V.Sathish Kumar- Representatives of Parents Mrs. P.Magila - Senior Administrative Officer Mr.B.R. Gopi - Manager Nodal Officer Dr.P.Vasudevan, Assoc. Professor/ Physics</p> <p><b><u>ANTI-RAGGING SQUAD MEMBERS</u></b></p> <ol style="list-style-type: none"> <li>1) Mr.D. Prithviraj - MECH</li> <li>2) Mr. V. Rajkumar - H&amp;S</li> <li>3) Mrs.D.Rajalakshmy - H&amp;S</li> <li>4) Dr.M. Sathish - ECE</li> <li>5) Ms. Kulastic Jassy A - FT</li> <li>6) Ms. E. Karuppathal - BME</li> <li>7) Ms. D. Anitha - EEE</li> <li>8) Ms. S.B. Nivethitha - MCT&amp;RA</li> <li>9) Mr. Prem Anand T.P – AERO</li> <li>10) Mr. R. Anbalagan - AUTO</li> <li>11) Dr. S. Narasimha Reddy - CHEM</li> <li>12) Mr M Ammaiappan - CIVIL</li> <li>13) Dr.Anandha Sivaprakasam - CSE</li> <li>14) Mr. Irumporai A - IT &amp; AIML</li> <li>15) Dr.C.B.Ragothaman - MBA</li> </ol> <p><b><u>STUDENT REPRESENTATIVES</u></b></p> <ol style="list-style-type: none"> <li>1) Deepika P D - III BIOTECH</li> <li>2) Mohammed Jaffar Sadiq - III MECH</li> <li>3) Sharan J G - I MCT</li> </ol>



# RAJALAKSHMI ENGINEERING COLLEGE

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S. N. Murugesan

PRINCIPAL  
RAJALAKSHMI ENGINEERING COLLEGE  
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THANDALAM, CHENNAI - 602 105.



			4) Srinaath K S - I AERO
2.	GRIEVANCE REDRESSAL CELL	Dr. Johanna Rajkumar DEAN/ BIOTECHNOLOGY  Dr. S.N.Murugesan Head of the Institution	Prof. I. Philip Praveen Student Counsellor - Ms. Sujatha Narayanan Member - Dr. M. Millicent Mabel Student Member - Sanjay.B Student Member - Poornimaa.M Student Member - Swathi.T
3.	INTERNAL COMPLIANCE COMMITTEE	DR. JOHANNA RAJKUMAR DEAN/ BIOTECHNOLOGY	1) Dr. D. Haripriya - Associate Professor/ Biotechnology Dept 2) Dr. NT. Mary Rosanna - Assistant Professor (SG)/Biotechnology Dept 3) Dr. Prasannakumari - IQAC Co-ordinator/REC 4) Dr. M. Subbiah - Professor Emeritus/ EEE Dept 5) Ms. Preetha Krishna Das - Deputy Director, Banyan (NGO)
4.	SC/ST/OBC CELL	Dr. S.N.Murugesan Head of the Institution	1) Dr. V. Prasannakumari - Professor/ IQAC. 2) Dr. M. Subbiah - Professor Emeritus/ EEE Department. 3) Dr. R. Kalaivani - Professor/ EEE Department. 4) Dr. A. Rajkumar - Professor/ Mechanical Department.
5.	CENTER FOR FOSTERING SOCIAL RESPONSIBILI TY	DR. CB. RAGOTHAMAN PROFESSOR/ MBA	1) Mrs. Alamelu. G - Asst. Prof/ H&S - English 2) Mr. Srihari G - Asst. Prof/ H&S - English 3) Mr. Anandaraj M - Asst. Prof/ H&S - English 4) Mr. Vijayanarasimhan K - Asst. Prof/ H&S - English 5) Dr. Premkumar P - Professor/ Bio Medical 6) Dr. Rajkumar A - Professor/ Mechanical 7) Mr. Joel D - Asst. Prof/ Mechanical 8) Mr. Chenthilkumar M - Asst. Prof/ Mechanical 9) Mr. Gururaj D - Asst. Prof/ ECE 10) Mr. Rajaram PV - Asst. Prof/ CSR 11) Dr. Millicent Mable M - Asst. Prof/ Bio Tech 12) Mr. Irumporai A - Asst. Prof/ IT 13) Dr. Vijayaraghavan M - Physical Director/Physical Education 14) Mr. Vinod Kumar S - Asst. Prof/ CSE
6	COMMITTEE FOR	DR. M.G. UMAMAHESWARI	1) Dr. R. Premkumar - Professor / BME 2) Dr. R. Jayasree - Professor / BT



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MONITORING THE PROGRESS OF THE PhD. SCHOLARS	PROFESSOR / EEE	3) Dr.S.Poonkuzhali - Professor / CSE 4) Dr.L.Bhagyalakshmi - Professor / ECE 5) Dr.S.Rama Reddy - Dean/EEE 6) Dr.N.Venkateshwaran - Professor / MECH 7) Dr.S.Sekar - Professor / MECH 8) Dr.V.Lakshmi - Professor / Maths 9) Dr.D.Udayakumari - Asst.Professor / Chemistry
INDUSTRY INSTITUTE INTERACTION CELL	DR.L.PRIYA PROFESSOR/IT	1)Dr.N.Venkateswaran - MECH 2) Dr.A.Sathya - IT 3) Mr. Surendra Bogadi - AERO 4) Dr.Mullai Suderoli - AUTO 5) Dr.Govindarajulu – BME 6) Mr.Arunkumar - BT 7)Ms.Goutham Priya - CIVIL 8)Dr.Prem kumar - EEE 9)Dr.B.Priya - ECE 10)Ms.K.R.Sowmia – IT 11)Mr.M.Shanmugam - MCT 12)Dr.Rajkumar A - MECH 13)Mr.P.V.Rajaraman - CSE 14)Ms.K.Poornimathi - IT 15)Dr.Priya Vijay - CSE 16)Mr.N.Mohan Gandhi - CEMV 17)Mr.R.Ghadhadharan - CEMV
IPR CELL – PATENT COMMITTEE	DR.V.GAYATHRI AOP/ BT	1) Dr.Priya Vijay - Professor/ CSE 2) Dr.M. Millicent Mable - AoP/ BT 3) Dr.A.Selvaraj - Professor/ EEE 4) Dr.R.Shanthi - Professor/ MECH 5) Dr.E.Shankar - AP (SG)/ MECH 6) Dr.B.Priya - Professor/ ECE 7) Mr.M.Shanmugam - AP/ MCT 8) Mr.P.Pavan - AP(SS)/ AUTO 9) Dr.S.Pavithra - AP (SG)/ IT
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			7) Mr.M.Shanmugam - AP/ MCT 8) Mr.P.Pavan - AP(SS)/ AUTO 9) Dr.S.Pavithra - AP (SG)/ IT
11	PROJECT PROPOSAL COMMITTEE	DR.S. POONKUZHALI PROFESSOR/ CSE	1) Dr.S.Baghavathipriya - HOD/ AI & ML 2) Dr.P.Saravanan - AP/ Biotech 3) Dr.N.Venkateshwaran - Professor/ MECH 4) Dr.S.Chitra - Professor/ ECE 5) Dr.P.Sivakumar - Assoc.Professor/ EEE 6) Dr.D.Udhayakumari - AP/ Chemistry
12	REC PUBLICATIONS FORUM	DR. V. MURALI BHASKARAN PROFESSOR(CSE) & DEAN Academics	1) Dr. N. Venkateshwaran - Professor / MECH 2) Dr. S. Sekar - Professor / MECH 3) Dr. G. Thanigaiarasu - Dean & Professor / MECH 4) Dr.V.Santhanam - Professor & Head / MCT 5) Dr. M. Palanivelan - Professor & Head / ECE 6) Dr. T. Manikandan - Professor / ECE 7) Dr. S. Poonkuzhali - Professor / CSE 8) Dr.S.Prithi - Asst. Professor (SG) / CSE 9) Dr. S. Baghavathi Priya - Professor & Head / AI&ML 10) Dr. K. Jayashree - Professor/CSE 11) Dr. K. Senthil Kumar - Asso. Professor / ECE 12) Dr. M. C. Jobin Christ - Professor / BME 13) Dr. Johanna Rajkumar - Professor and Dean / BT 14) Dr. P. Rajasekar - AP (SG) / BT 15) Dr. M.G Uma Maheswari - Professor / EEE 16) Dr. S. Rama Reddy - Dean & Professor/ EEE 17) Dr. K. Ramalakshmi - Professor & Head / FT 18) Dr. G. Vijayaraghavan - Asst. Professor (SG) / Chem 19) Dr. V. Lakshmi - Professor / Maths 20) Dr. D. Udhayakumari - Asst. Prof. / Chemistry 21) Dr. P. Vasudevan - Asso.Prof. / Physics 22) Dr. Sankararaman G - Professor / MBA 23) Dr.S.Geetha - Professor / Civil
13	TALENT ENHANCEMENT CELL (TEC)	DR. K. BHASKAR PROFESSOR AND HEAD/AUTOMOBILE ENGINEERING	1) Ms. D. Sornashanthi - AoP/CSE 2) Dr. D. Indumathy - AP(SG)/ECE 3) Dr. R. Surendar - AP (SS)/ECE



**NCC AIR-WING (2016-2020 Batch)**



2016 batch students (from left to right in the above photograph): (1) Dinakaran P (2) Sanjana Rao (3) Supriya Gopalan (4) Manivannan B (5) Ashokraj S. (2016-2020 Batch)

S. No	Name of the Student	Roll Number	Batch	Certificate Number
1	Dinakaran P	201614013	2016	TN17SDF961050
2	Sanjana Rao	201614045	2016	TN17SWF961057
3	Supriya Gopalan	201614051	2016	TN17SWF961055
4	Manivannan B	201614024	2016	TN17SDF961049
5	Ashokraj S.	201614005	2016	TN17SDF961053



*S. V. Praveen*

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**FIRST YEAR NOMINAL ROLL  
AS ON 14/12/2021**

S/NO	ENROLLMENT NUMBER	RANK	NAME
1	TN 21SDN 928901	NC-II	AJAY R R
2	TN 21SDN 928902	NC-II	AKSHATH SINHA J
3	TN 21SDN 928903	NC-II	BRAGADISH K
4	TN 21SDN 928904	NC-II	GOWRISHANKAR S
5	TN 21SDN 928905	NC-II	GURU PRASATH
6	TN 21SDN 928906	NC-II	HARI AMERTHESHN
7	TN 21SDN 928907	NC-II	KISHORE K
8	TN 21SDN 928908	NC-II	MUKESH S
9	TN 21SDN 928909	NC-II	MUNESWARAN A
10	TN 21SDN 928910	NC-II	MUTHU GANESH S
11	TN 21SDN 928911	NC-II	PRANAV VARMA D
13	TN 21SDN 928912	NC-II	RAKSHITH KUMAR S
14	TN 21SDN 928913	NC-II	RANGA RAJAN D
15	TN 21SDN 928914	NC-II	RISHI BHARATH
16	TN 21SDN 928915	NC-II	RITHWICK V
17	TN 21SDN 928916	NC-II	RITVIK PRASAD M
18	TN 21SDN 928917	NC-II	ROHIT M
19	TN 21SDN 928918	NC-II	SARATH A S
12	TN 21SDN 928919	NC-II	SELVA KUMARAN S
20	TN 21SDN 928920	NC-II	SHARATHKANDHAN B A
21	TN 21SDN 928921	NC-II	SIVA SARAVANA SELVAM R
22	TN 21SWN 928922	NC-II	YAJNESH S
23	TN 21SWN 928923	NC-II	ARUNA DEVI V
24	TN 21SWN 928924	NC-II	ATHIRA PRAMOD
25	TN 21SWN 928925	NC-II	DEJA SHREE S
26	TN 21SWN 928926	NC-II	JAGHATHARANI S
27	TN 21SWN 928927	NC-II	KANNATHAL K
28	TN 21SWN 928928	NC-II	KAVIYA D
29	TN 21SWN 928929	NC-II	MADHU PRIYA S
30	TN 21SWN 928930	NC-II	NANDHITHAA N
31	TN 21SWN 928931	NC-II	SHOBITHAA S
32	TN 21SWN 928932	NC-II	SHRIDHARANI
33	TN 21SWN 928933	NC-II	VANAA BALA D
34	TN 21SWN 928934	NC-II	YASHWANTHINI V

*S. V. Murugesan*

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