



SRI RAMAKRISHNA ENGINEERING COLLEGE

[Educational Service : SNR Sons Charitable Trust]
Vattamalaipalayam, N.G.O. Colony Post,
Coimbatore – 641022.

 www.srec.ac.in
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**MINUTES OF THE 21st BOARD OF STUDIES MEETING FOR THE UG BE
AERONAUTICAL PROGRAMME HELD ON 14.03.26 AT 09.30 AM at Aeronautical
Board Room , SREC conducted through online mode : Gmeet : meet.google.com/ekf-pngo-pyb**

The following members attended the above meeting.

1. **Dr. P. Chandramohan – Chairperson**
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.
2. **Dr. P. R. Thyla- University Nominee**
Professor,
Department of Mechanical Engineering,
PSG College of Technology,
Coimbatore - 641 004
3. **Dr. R. Senthilraja – University Nominee**
Prof & Head, Department of Automobile Engineering,
Government College of Engineering (IRTT),
Erode - 638 316
4. **Dr. A. Sameen, - Subject Expert from other University**
Professor, Department of Aerospace Engineering,
Indian Institute of Technology- Madras,
Chennai - 600 036
5. **Dr. S. Periyasamy,- Subject expert from Parent University**
Associate Professor,
Department of Mechanical Engineering,
Government College of Technology,
Coimbatore - 641 013
6. **Mr. Sree Ragav - Industry member**
Aircraft Design Lead,
The Eplane Company,
IIT Madras, Chennai
7. **Dr. Gokul Prasad (2008-2012) – Meritorious Alumnus**

Team Lead- MBD-SE,
Tata Elxsi, Bengaluru - 560 048

8. Dr. C. J. Thomas Renald—*Member & Department BoS Coordinator*

Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

9. Mr. C. Dinesh—*Member*

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

10. Mr. Robin Johny—*Member*

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

11. Mr. R. Sivakumar – *Member*

Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

12. Mr. V. Siva – *Member*

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

13. Mr. Veeramani – *Member*

Assistant Professor ,
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022

14. Dr. N. Gopalakrishnan— *Member*

Assistant Professor (Sl.G),
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

Absentees:

1. Mrs. S. Rangeetha— *Member*

Assistant Professor (Sl.Gr),

Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Prof. P. Chandramohan, Chairperson, Board of Studies, chaired the meeting and Dr. C. J. Thomas Renald welcomed all the members to the 21st BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed.

ITEM No. 1

- It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2022, 2023 & 2024.

ITEM No. 2

- It is resolved that Revised Regulation 2025 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2025.
- It is resolved that the curriculum and Syllabi be approved for the following new courses

SEMESTER V

S. No	Course Code	Course Title	Category	L	T	P	C
THEORY							
1.	25AE2300	High Speed Aerodynamics	PCC	3	0	0	3
2.	25AE2301	Aircraft Structural Mechanics II	PCC	2	0	0	2
3.	25EIXXX	Control System for Aeronautics	MDC	3	0	0	3
4.	25AE2XXX	Professional Elective I	PEC	3	0	0	3
5.	25XX	Open Elective II	OEC	3	0	0	3
THEORY CUM LABORATORY							
6.	25AE2350	Analysis and Design of Composite Structures	PCC	2	0	2	3
7.	25AE2351	Air Breathing Propulsion	PCC	2	0	2	3
8.	25EIXXX	Aerospace Sensors and Instrumentation	SEC	1	0	2	2
PRACTICAL							

9.	25AE2370	Multi-disciplinary Project	ELC	0	0	4	0
Total							22

SEMESTER VI

S. No	Course Code	Course Title	Category	L	T	P	C
THEORY							
1.	25AE2302	Safety, Reliability and Airworthiness	HSSM	3	0	0	3
2.	25AE2303	Flight Mechanics	PCC	3	1	0	4
3.	25AE2304	Space Propulsion	PCC	3	0	0	3
4.	25AE2XXX	Professional Elective II	PEC	3	0	0	3
THEORY CUM LABORATORY							
5.	25AE2352	Finite Element Analysis	PCC	2	0	2	3
6.	25AE2353	Avionics	MDC	2	0	2	3
PRACTICAL							
7.	25AE2371	Aerial Vehicle Design-I	PCC	0	0	2	1
8.	25AE2370	Multi-disciplinary Project	ELC	0	0	4	2
Total							22

- It is resolved that the syllabi for the following new Professional Core Courses under (Revised) Regulations 2025 be approved and passed.

S. No	Course Code	Course Title	Credits
1.	25AE2300	High Speed Aerodynamics	3
2.	25AE2301	Aircraft Structural Mechanics II	2
3.	25AE2350	Analysis and Design of Composite Materials	3
4.	25AE2351	Air Breathing Propulsion	3
5.	25AE2303	Flight Mechanics	4

6.	25AE2304	Space Propulsion	3
7.	25AE2352	Finite Element Analysis	3
8.	25AE2371	Aerial Vehicle Design I	2

- It is resolved that the syllabi for the following new Professional Elective Courses under (Revised) Regulations 2025 be approved and passed.
- It is resolved that the syllabi for the following new Open Elective Courses under (Revised) Regulations 2025 be approved and passed.

S. No.	Course Code	Course Name	Credits
1.	25AE2380	Sports and Building Aerodynamics	3
2.	25AE2381	Experimental Aerodynamics	3
3.	25AE2382	Applied Stress Analysis	3
4.	25AE2383	Futuristic Frames and its Techniques	3
5.	25AE2384	Helicopter Maintenance	3
6.	25AE2385	Fatigue & Fracture Mechanics	3
7.	25AE2386	Analytical Heat Transfer	3
8.	25AE2387	Combustion & Emission	3

S. No.	Course Code	Course Name	Credits
1.	25AE2180	Fundamentals of Applied Aeronautics	3
2.	25AE2181	Electric Aviation	3
3.	25AE2182	Space: The Final Frontier	3

- It is resolved that the syllabi for the following new Multidisciplinary Minor Courses under (Revised) Regulations 2025 be approved and passed.

S. No.	Course Code	Course Name	Credits
1.	25AE2360	Drone Technology	3
2.	25AE2361	Intelligent Drone Systems	3

- It is resolved that the following NPTEL courses are approved for credit transfer during April/May 2026

S. No.	Course Name	Course Code	Duration	Credits
1	Aeromechanics of Unmanned Aerial Vehicles / Drones	noc26-ae03	12 Weeks	3
2	Wind Energy	noc26-ae11	12 Weeks	3
3	Aircraft Design	noc26-ae12	12 Weeks	3
4	Gas Turbines & Jet Engines	noc26-me94	12 Weeks	3
5	Manufacturing Process Technology I & II	noc26-me47	12 Weeks	3
6	Surface Engineering for Corrosion and Wear Resistance Application	noc26-mm35	12 Weeks	3
7	Characterization of Polymers, Elastomers and Composites	noc26-ch29	12 Weeks	3
8	MATLAB Programming for Numerical Computation	noc26-ch42	12 Weeks	3

- It is resolved that the following Mandatory courses are approved for BE Aeronautical Engineering students of batch 2024-2028

S. No.	Mandatory Course	Course Code	No. of Students Completed
1	Technical Certification (Allied Skills)	20MC275	33

- It is resolved that the Result Analysis for the Academic Year 2024 – 2025 (Semesters VII/ V/ III/I) Nov 2025 Examinations are approved and passed.

ITEM No. 3

Batch/Semester	Overall Pass Percentage %
Batch 2022 - Semester 7	93.75
Batch 2023 - Semester 5	72.41
Batch 2024 - Semester 3	81.25
Batch 2025- Semester 1	59.38

Sem: 7

Course Title	Pass Percentage
INTERNSHIP	100
UNMANNED VEHICLES IN SEARCH AND RESCUE OPERATIONS	100
COMBUSTION AND EMISSIONS	100
HIGH TEMPERATURE MATERIALS	95.45

AIRCRAFT RULES AND REGULATIONS	91.3
AVIATION SAFETY	100
PRODUCT DESIGN AND MANUFACTURING (NPTEL)	100

Sem: 5

Course Title	Pass Percentage
HIGH SPEED AERODYNAMICS	82.76
SPACE PROPULSION	93.1
AVIONICS	100
FINITE ELEMENT ANALYSIS	82.76
PROPULSION MEASUREMENT PRACTICES LABORATORY	100
DESIGN THINKING	100
CONTROL SYSTEMS IN AERONAUTICS	96.55
PROGRAMMING IN PYTHON	89.66
PROGRAMMING IN PYTHON LABORATORY	100
HEAT TRANSFER	85.19
JAVA PROGRAMMING	79.31
NON DESTRUCTIVE TESTING FOR AIRCRAFT	100
SOFTWARE DEFINED VEHICLES	100
PRODUCT DESIGN AND MANUFACTURING (NPTEL)	100
IC ENGINES AND GAS TURBINES (NPTEL)	100

Sem: 3

Course Title	Pass Percentage
FLUID MECHANICS AND MACHINERY	96.88
THERMODYNAMICS	90.63
MECHANICS OF MATERIALS	93.75
AIRCRAFT SYSTEMS	96.88
MACHINING SCIENCE AND TECHNOLOGY	93.75
MECHANICAL SCIENCES LABORATORY	100
COMPUTER AIDED DESIGN PRACTICES	100
PROGRAMMING FOUNDATIONS	93.75
PROGRAMMING FOUNDATIONS LABORATORY	89.66
PARTIAL DIFFERENTIAL EQUATIONS AND TENSOR CALCULUS	93.75
INTERNET OF THINGS	100
CALCULUS AND NUMERICAL METHODS	100

Sem: 1

Course Title	Pass Percentage
ENGINEERING GRAPHICS AND MODELLING	87.5
BIOLOGY FOR ENGINEERS	100
BASIC SCIENCES LABORATORY	100
CHEMICAL SCIENCE	68.75

AIRCRAFT ELECTRICAL AND ELECTRONICS SYSTEMS	84.38
BUSINESS AND CORPORATE COMMUNICATION	100
MATRICES, DIFFERENTIAL CALCULUS AND TRANSFORMS	75
PHYSICS IN TECHNOLOGICAL APPLICATIONS	87.5
HERITAGE OF TAMILS	90.63

ITEM No. 4

As per the Suggestions from the Institution's Curriculum Review Committee, the following revisions are proposed and resolved as follows:

1. The course [25HS2101 – Indian Knowledge System] passed under the 19th Board of Studies as a Liberal Arts Course Category is proposed to be reclassified as a Humanities, Social Sciences and Management Course.
2. The courses [25AE2250 – Sustainable Aviation & 25AE2253 – Numerical Methods using MATLAB] passed under the 20th Board of Studies as a Value Added Course Category is proposed to be reclassified as a Skill Enhancement Course (SEC) Category.
3. The title of the course [25AE2253 – Numerical Methods using MATLAB] is proposed to be changed to Computational Numerical Methods, in order to maintain software neutrality while emphasizing computational implementation using programming tools and engineering software.
4. The course [25AE2200 – Mechanics of Materials] passed under the 20th Board of Studies is proposed to be renamed as Mechanics of Engineering Materials.

Comments and Suggestions from Board of Studies Members:

1. Dr. Sameen A., IIT Madras (External Expert)

- Observed that the curriculum includes a course on **Helicopter Maintenance** but does not include fundamental topics such as **Helicopter Aerodynamics, Dynamics, and Control**.
- Suggested that students should first understand the **physics and design principles of helicopter systems** before learning maintenance practices.
- Recommended that the syllabus should include **modules on Helicopter Aerodynamics and Helicopter Dynamics/Control**.

- Suggested that the course title may be modified to something more comprehensive, such as **"Fundamentals of Helicopters and Maintenance"**, to reflect both theory and practical aspects.

2. Dr. Thyla P. R., PSG College of Technology (External Academic Member)

- Noted that the topics listed under **Aircraft Structural Mechanics II** appear **generic in nature** and suggested strengthening the syllabus with clearer **aircraft-specific applications**.
- Suggested reviewing the **Composite Structures Laboratory** experiments, particularly those related to the **influence of fibre orientation and additives**, to ensure that the experiment titles accurately reflect the actual laboratory activities performed.
- Recommended that the laboratory experiments should clearly indicate whether they involve **fabrication, testing, or analytical study** to avoid ambiguity.
- Advised the department to **review the reference books listed in the syllabus and include at least one recent edition textbook/reference** wherever possible to ensure updated learning resources.

3. Mr. Sree Raghav (Industry Representative)

- Suggested that students should be provided with **greater exposure to CAD tools for composite design**, not just conventional modelling such as sheet metal or structural modelling.
- Highlighted that **industry demand for engineers with knowledge of composite modelling tools is increasing**, and therefore introducing **composite-specific CAD modules** would benefit students.
- Recommended incorporating such exposure within the **existing CAD or design-related courses or through certification modules**.
- Flight Mechanics to be pre-poned before control system for aeronautics if possible.

4. Mr. Senthil Raja (Industry Representative)

- Enquired whether the curriculum includes a **separate course on Turbomachinery**, considering its relevance to aeronautical engineering.
- Suggested that turbomachinery concepts may still be important for aeronautical students and sought clarification on how these topics are covered in the curriculum.

5. Dr. S. Periyasamy (Subject expert from Parent University)

- Suggested to check the credit of **Aircraft Structural Mechanics II** and whether it is a **numerical oriented** course.
- Suggested that **web references** included in the syllabus should be updated as the links change every year.
- **Safety, Reliability and Airworthiness references are not having year**; standardize the reference system.
- Air Breathing Propulsion experiments related with HMT may be suitably changed to **turbomachinery section**.
- Experimental Aerodynamics – **separate heading for DAQ** and verify theory hours allocation.
- In Analytical Heat Transfer, **introduce 2D** as well.

5. General Observations from the Board

- Members suggested that **minor refinements to certain course syllabi** may improve **clarity and alignment with practical applications**.
- It was recommended that the department **periodically review and update course references to include recent publications**.
- The Board appreciated the **curriculum structure and overall course distribution across semesters**.

The meeting concluded with the vote of thanks by Dr. C. J. Thomas Renald ASP/Aero



Name of the Member	Designation	Signature
Dr. P. Chandramohan	Chairperson	
Dr. P. R. Thyla	University Nominee	Acknowledgement received from mail
Dr. R. Senthilraja	University Nominee	"
Dr. A. Sameen	Subject Expert from other University	"
Dr. S. Periyasamy	Subject expert from Parent University	"
Mr. Sree Ragav	Industry Expert	"
Dr. Gokul Prasad	Meritorious Alumnus	"
Dr. C. J. Thomas Renald	Member & Department BoS Coordinator	
Mr. K. Robin Johny	Member	
Mr. C. Dinesh	Member	
Mr. R. Sivakumar	Member	
Mr. V. Siva	Member	
Mrs. S. Rangeetha	Member	
Dr. N. Gopalakrishnan	Member	
Mr. Veeramani	Member	

CHAIRPERSON
BOARD OF STUDIES
 Department of Aeronautical Engineering
Chairman
Board of Studies

**SREC**

Thomas Renald <thomasrenald.joseph@srec.ac.in>

21st BoS Aero Board minutes and Syllabus- Reg

11 messages

Thomas Renald <thomasrenald.joseph@srec.ac.in>

Mon, Mar 30, 2026 at 10:52 AM

To: HoD Aero <hod-aero@srec.ac.in>

Bcc: sameen@ae.iitm.ac.in, prt.mech@psgtech.ac.in, Senthil Raja <senthilrajairtt@gmail.com>, gokul.s5@tataelxsi.co.in, Sree Raghav <ragav@eplane.ai>, Siva Periyasamy <speriyyasamy@gmail.com>

Sir/Madam,

The minutes of the 21st Board of Studies—Aero Board meeting and corrected syllabus as per the suggestions is forwarded for your perusal. We request you to acknowledge the same at the earliest.

Thank you,

Dr.C.J.Thomas Renald Ph.D
Professor/Aeronautical
BoS Dept Coordinator
Sri Ramakrishna Engineering College
Coimbatore- 641022
9894956436

2 attachments**Aero 5-6.docx**
203K**21 Aero BOS Minutes (1).doc**
911K

sameen <sameen@ae.iitm.ac.in>

Mon, Mar 30, 2026 at 11:50 AM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Cc: HoD Aero <hod-aero@srec.ac.in>

yes..acknowledged!

Thanks

sameen

A. Sameen
Professor,
Department of Aerospace Engineering
Indian Institute of Technology Madras,
Chennai 600 036

Phone: (044)2257-4013

<https://home.iitm.ac.in/sameen><http://iitm.irins.org/profile/50701>

On 2026-03-30 10:52, Thomas Renald wrote:

Sir/Madam,

The minutes of the 21st Board of Studies—Aero Board meeting and corrected syllabus as per the suggestions is forwarded for your perusal. We request you to acknowledge the same at the earliest.

Thank you,

Dr.C.J.Thomas Renald Ph.D
Professor/Aeronautical

BoS Dept Coordinator Sri Ramakrishna Engineering College
Coimbatore- 641022
9894956436

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Sree Raghav <ragav@eplane.ai>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>
Cc: HoD Aero <hod-aero@srec.ac.in>

Mon, Mar 30, 2026 at 12:11 PM

Hi

I had a comment: Flight Mechanics comes first, and then comes the control system for aeronautics.
Other than that I am good to go with the Minutes recorded and published!

[Quoted text hidden]

[Quoted text hidden]

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Regards,
Sree Raghav R,
Dy.Chief Of Design;
The ePlane Company ([eplane.ai](mailto:ragav@eplane.ai)),
IIT-Madras.

+91 8088018463 | [linkedin.com/in/sree-raghav-ab539331](https://www.linkedin.com/in/sree-raghav-ab539331)

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Dr Thyla Pr - PSGCT <prt.mech@psgtech.ac.in>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Mon, Mar 30, 2026 at 12:22 PM

Dear Professor,

I approve the minutes of the 21st meeting of the Board of Studies—Aero Board, held on March 14, 2026, online.

With best regards,

Dr P R Thyla
Professor
Department of Mechanical Engineering
PSG College of Technology
Coimbatore - 641004, Tamilnadu, India.

On Mon, Mar 30, 2026 at 10:51 AM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]

Siva Periyasamy <speriyyasamy@gmail.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Mon, Mar 30, 2026 at 2:12 PM

Dear Professor

I acknowledge the minutes and check the following and proceed

Is aircraft structural mechanics a numerical oriented subject? check the credit, that is 2.

Take care about web references, that may change and interlink are available.

Safety, Reliability and Airworthiness reference not having year but few of them had year, standardize the reference system.

In 25AE2351 AIR BREATHING PROPULSION experiments related with HMT may suitably be changed to the turbo machinery section.

FEM..content..

Heading formats check .. Avionics.

25AE2386ANALYTICAL HEAT TRANSFER , the 2D may be introduced.

In 25AE2381 EXPERIMENTAL AERODYNAMICS, the separate heading required for DAQ and check the theory hours allocation and total

25AE2301	Aircraft Structural Mechanics II	PCC	2	0	0	2
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On Mon, Mar 30, 2026 at 10:51 AM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Robin Johny K <robinjohny.k@srec.ac.in>

Mon, Mar 30, 2026 at 2:22 PM

Dr.C.J.Thomas Renald Ph.D
Professor/Aeronautical
Sri Ramakrishna Engineering College
Coimbatore- 641022
9894956436

[Quoted text hidden]

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Robin Johny K <robinjohny.k@srec.ac.in>

Mon, Mar 30, 2026 at 2:22 PM

Dr.C.J.Thomas Renald Ph.D
Professor/Aeronautical
Sri Ramakrishna Engineering College

Coimbatore- 641022
9894956436

----- Forwarded message -----

From: **Sree Raghav** <ragav@eplane.ai>
Date: Mon, 30 Mar 2026, 12:12
Subject: Re: 21st BoS Aero Board minutes and Syllabus- Reg
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>
Cc: HoD Aero <hod-aero@srec.ac.in>

[Quoted text hidden]

Siva Periyasamy <speriyyasamy@gmail.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Tue, Mar 31, 2026 at 9:39 AM

Dear Professor
the signed document attached for your kind perusal

[Quoted text hidden]

 **21 Aero BOS Minutes (1).doc**
912K

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Robin Johny K <robinjohny.k@srec.ac.in>

Mon, Apr 6, 2026 at 11:55 AM

Dr.C.J.Thomas Renald Ph.D
Professor/Aeronautical
Sri Ramakrishna Engineering College
Coimbatore- 641022
9894956436

----- Forwarded message -----

From: **Siva Periyasamy** <speriyyasamy@gmail.com>
Date: Tue, Mar 31, 2026 at 9:39 AM
Subject: Re: 21st BoS Aero Board minutes and Syllabus- Reg
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

[Quoted text hidden]

 **21 Aero BOS Minutes (1).doc**
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Senthil Raja <senthilrajairtt@gmail.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Wed, Apr 8, 2026 at 9:41 AM

Respected Sir,
Minutes of the meeting has been thoroughly studied and approved for the further process

Dr.R.Senthilraja,
Head of the Department(i/c) /Automobile Engineering
Government College of Engineering,
Erode - 638 316
Dr.R.Senthilraja,
Assistant Professor,
Department of Mechanical Engineering,
Institute of Road and Transport Technology,
Erode - 638 316

On Mon, Mar 30, 2026 at 10:51 AM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]

Senthil Raja <senthilrajairtt@gmail.com>

Wed, Apr 8, 2026 at 9:44 AM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Respected Sir,

Minutes of the meeting has been thoroughly studied and approved for the further process

Dr.R.Senthilraja,
Head of the Department(i/c) /Automobile Engineering
Government College of Engineering,
Erode - 638 316

On Mon, Mar 30, 2026 at 10:51 AM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]



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SRI RAMAKRISHNA ENGINEERING COLLEGE, COIMBATORE – 22

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[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]

[ISO 9001:2015 Certified and all eligible programmes Accredited by NBA]

MINUTES OF THE 20th BOARD OF STUDIES MEETING FOR THE UG BE AERONAUTICAL PROGRAMME HELD ON 08.07.2025 AT 09.30 AM at Aeronautical Board Room , SREC .

The following members attended the above meeting.

1. **Dr. P. Chandramohan– Chairperson**
Professor & Head,
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Prof & Head, Department of Automobile Engineering,
Government College of Engineering (IRTT),
Erode - 638 316
4. **Dr. A. Sameen, - Subject Expert from other University**
Professor, Department of Aerospace Engineering,
Indian Institute of Technology- Madras,
Chennai - 600 036
5. **Dr. S. Periyasamy,- Subject expert from Parent University**
Associate Professor,
Department of Mechanical Engineering,
Government College of Technology,

Coimbatore - 641 013

6. Mr. Sree Ragav - Industry member

Aircraft Design Lead,
The Eplane Company,
IIT Madras, Chennai

7. Dr. Gokul Prasad (2008-2012) – Meritorious Alumnus

Team Lead- MBD-SE,
Tata Elxsi, Bengaluru - 560 048

8. Dr. C. J. Thomas Renald–Member & Department BoS Coordinator

Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

9. Mr. C. Dinesh–Member

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore - 641 022.

10. Mr. Robin Johny–Member

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

11. Mr. R. Sivakumar – Member

Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

12. Mr. V. Siva – Member

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

13. Mr. Veeramani – Member

Assistant Professor ,
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022

14. Mrs. S. Rangeetha– Member

Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

15. Dr. N. Gopalakrishnan– Member

Assistant Professor (Sl.G),
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Prof. P. Chandramohan, Chairperson, Board of Studies, chaired the meeting and welcomed all the members to the 18th BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed.

ITEM No. 1

- It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2022, 2023 & 2024.

ITEM No. 2

- It is resolved that the following NPTEL courses are approved for credit transfer during Nov/Dec 2025.

S. No.	Course Code	Course Name	Duration	Credits
1	NOC25-AE23	Aircraft Stability and Control	12 Weeks	3
2	NOC25-AE29	Space Flight Mechanics	12 Weeks	3
3	NOC25-AE30	Drone Systems and Control	12 Weeks	3
4	NOC25-AE27	Industrial Aerodynamics	12 Weeks	3
5	NOC25-ME125	Rapid Manufacturing	12 Weeks	3
6	NOC25-MM36	Nanomaterials and their Properties	12 Weeks	3
7	NOC25-MM66	Fracture, Fatigue and Failure Of Materials	12 Weeks	3
8	NOC25-ME145	Applied Thermodynamics for Engineers	12 Weeks	3

- It is resolved that the following students have completed the NPTEL courses and opted for credit transfer.

S. No	Reg No.	Name	Course Code	Course Name
1	71812208002	AVUYKTA SHREE	NOC25-ME67	Product Design and Manufacturing
2	71812208007	HARISH KARTHICK Y	NOC25-ME67	Product Design and Manufacturing
3	71812208008	J M JENEESH	NOC25-ME67	Product Design and Manufacturing
4	71812208013	N MOHAMED SAFRAN	NOC25-ME67	Product Design and Manufacturing
5	71812208020	SAKTHEEN B A	NOC25-ME67	Product Design and Manufacturing
6	71812208023	B SHANMUGA PRIYAN	NOC25-ME67	Product Design and Manufacturing
7	71812308006	BOOMIKA A	NOC25-ME67	Product Design and Manufacturing
8	71812308016	KAVIN P	NOC25-ME36	IC Engines and Gas Turbines
9	71812308022	SANJEEVKUMAR J	NOC25-ME36	IC Engines and Gas Turbines

- It is resolved that the Result Analysis for the Academic Year 2024 – 2025 (Semesters VIII/ VI/ II) are approved and passed.

ITEM No. 3

Batch/Semester	Overall Pass Percentage %
Batch 2021 - Semester 8	100
Batch 2022 - Semester 6	87.5
Batch 2023 - Semester 4	75
Batch 2024 - Semester 2	70.97

Sem: 8

Course Title	Pass Percentage
PROJECT WORK	100
UNMANNED VEHICLES IN SEARCH AND RESCUE OPERATIONS	100
INTERNSHIP	100

Sem: 6

Course Title	Pass Percentage
VIBRATION AND STRUCTURAL HEALTH MONITORING	100
AIRCRAFT MAINTENANCE ENGINEERING	93.75
AIRCRAFT STABILITY AND CONTROL	90.63
ANALYSIS AND DESIGN OF COMPOSITE STRUCTURES	87.5
COMPUTATIONAL FLUID DYNAMICS	96.88
AUTONOMOUS AERIAL ROBOTIC SYSTEMS	96.88
MINI PROJECT - II	100
FLIGHT TRAINING LABORATORY	100
AIRCRAFT DESIGN PROJECT	100
FUTURISTIC FRAMES AND ITS TECHNIQUES	100

NON DESTRUCTIVE TESTING FOR AIRCRAFT	100
FUNDAMENTALS OF MANUFACTURING PROCESSES	100
INTRODUCTION TO AEROSPACE ENGINEERING-FLIGHT	100

Sem: 4

Course Title	Pass Percentage
LOW SPEED AERODYNAMICS	86.21
AIR BREATHING PROPULSION	93.1
AIRCRAFT STRUCTURAL MECHANICS	75.86
AIRCRAFT PERFORMANCE	82.76
MINI PROJECT - I	96.43
LOW SPEED AERODYNAMICS LABORATORY	96.55
AIRCRAFT STRUCTURES LABORATORY	96.55
DATA STRUCTURES AND ALGORITHM ANALYSIS LABORATORY	96.55
DATA STRUCTURES AND ALGORITHM ANALYSIS	89.66
DIGITAL AND EMBEDDED SYSTEMS	89.66
TRANSFORMS, PROBABILITY AND STATISTICS	79.31
EXPERIMENTAL STRESS ANALYSIS	100

Sem: 2

Course Title	Pass Percentage
AVIATION MANAGEMENT	90.63
COMPUTING LABORATORY	100
ENGINEERING DRAWING PRACTICE	100
ENGINEERING MECHANICS	96.88
ARTIFICIAL INTELLIGENCE	84.38
AEROSPACE SENSORS AND INSTRUMENTATION	100
AEROSPACE SENSORS AND INSTRUMENTATION LABORATORY	100
CALCULUS AND NUMERICAL METHODS	90.32
AIRCRAFT MATERIALS AND PROCESSES	100
ADVANCED BUSINESS COMMUNICATION	100
BASIC JAPANESE	100
INTERMEDIATE ENGLISH FOR ENGINEERING	100
BASIC GERMAN	100

- It is resolved that the courses and its syllabi be approved for the Honors Specialization / minors in B.E. Aeronautical degree programme

ITEM No. 4

S. No.	Course Code	Course Name	Credits	Mode of Delivery	Offered by
1.	20AE2E23	Fixed Wing UAS – 101	3	Class	SREC
2.	20AE2E24	Rotary Wing UAS – 101	3	Class	SREC
3.	20AE2E25	UAS Aerodynamics	3	Class	SREC
4.	20AE2E26	Applications of UAS	3	Class	SREC
5.	20AE2E27	UAS: Safety, Rules and Ethics	3	Class	SREC
6.	20AE2E28	Design of Fixed Wing UAS	3	NPTEL	SREC
7.	20AE2E29	Design of Rotary Wing UAS	3	Class	SREC
8.	20AE2E30	Avionics in UAS	3	Class	SREC

- It is resolved that the following Honors/Minor courses are offered during the odd semester of Academic Year 2025 – 2026 and the following eligible students be approved for the Honors / minors in B.E. Aeronautical degree programme

Course Code: 20AE2E23 **Course Title:** Fixed Wing UAS-101

Course Code: 20AE2E24 **Course Title:** Rotary Wing UAS-101

- It is resolved that the following Mandatory courses be approved for the student in B.E. Aeronautical degree programme

ITEM No. 5

Batch: 2022 - 2026

S. No	Mandatory Course	Course Code	No. of Students Completed
1.	Personality and Character Development	20MC083	32
2.	Technical Certification (Allied Skills)	20MC275	32

Batch: 2023 - 2027

S. No	Mandatory Course	Course Code	No. of Students Completed
1.	Personality and Character Development	20MC083	29

2.	Technical Certification (Allied Skills)	20MC275	29
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Batch: 2024 - 2028

S. No	Mandatory Course	Course Code	No. of Students Completed
1.	Personality and Character Development	20MC083	32

ITEM No. 6

- It is resolved that the following students had completed 4/6 weeks of Internship/Inplant training be approved for the student in B.E. Aeronautical degree programme

Batch: 2022 - 2026

S. No	Industry	No. of Students Completed
1.	Indian Institute of Technology Madras, Chennai (4 Weeks)	05
2.	Vignesh Machine Tools, Coimbatore (2 Weeks) with stipend Rs.15,000/-	02
3.	Artispec Technologies Pvt. Ltd., Coimbatore (4 Weeks)	06
4.	Innovative Engineering Services, Coimbatore (2 Weeks)	01
5.	Coimbatore International Airport, Coimbatore (2 Weeks)	05
6.	Texmo Sri Siva Sakthi Metal Works, Coimbatore (4 Weeks)	04
7.	Jet Aerospace Aviation Research Center, Palakkad (2 Weeks)	01
8.	Madras Institute of Technology, Chennai (4 Weeks)	05
9.	Web Epic Technologies Pvt. Ltd., Coimbatore (4 Weeks)	05
10.	VAF Def-Aero Systems Pvt. Ltd., Trichy (4 Weeks)	01
11.	National Institute of Technology, Trichy (4 Weeks)	02
12.	Indian Institute of Technology Palakkad (4 Weeks) with stipend of Rs. 12,000/-	01
13.	Vigneshwara Engineering Works, Nilgiris (3 Weeks)	01
14.	Aeroknotz Drones Pvt. Ltd, Chennai (4 Weeks)	01
15.	Indian Institute of Technology Madras, Chennai (4 Weeks)	05
16.	Vignesh Machine Tools, Coimbatore (2 Weeks) with stipend Rs.15,000/-	02

Batch: 2023 - 2027

S. No	Industry	No. of Students Completed
1.	Spacim Aerospace Technology Solutions Pvt. Ltd., Coimbatore (2 Weeks)	02
2.	Kalasilingam Academy of Research and Education, Srivilliputhur (4 Weeks)	03

3.	KUN Aerospace Pvt. Ltd., Chennai (2 Weeks)	03
4.	National Institute of Technology, Trichy (4 Weeks)	04
5.	Central Manufacturing Technology Institute, Bangalore (4 Weeks)	01

ITEM No. 7

R2025

- It is resolved that Regulations 2025 (Outcome based Curriculum through Choice based Credit System,) will be followed for all B.E./B.Tech/M.Tech(Int). programmes for students admitted in the Academic year 2025 and onwards.
- It is resolved that the Curriculum and Syllabi be approved for the following new courses

Semester 3:

S. No	Course Code	Course Title	Category	L	T	P	C
THEORY							
1.	25MAXXX	Applied Mathematics and Statistics	BSC	3	1	0	4
2.	25AE2200	Mechanics of Materials	ESC	3	0	0	3
3.	25AE2201	Fluid Mechanics	PCC	3	0	0	3
4.	25AE2202	Thermodynamics	PCC	3	0	0	3
THEORY CUM LABORATORY							
5.	25AE2250	Sustainable Aviation	VAC	1	0	2	2
PRACTICAL							
6.	25AE2270	Mechanical Science Lab	ESC	0	0	2	1
7.	25AE2271	Design Thinking	AEC	0	0	4	2
8.	25AE2272	Computing Laboratory	SEC	0	0	4	2
9.	25AE2273	Mini Project	ELC	0	0	4	0
Total							20

Semester 4:

S. No	Course Code	Course Title	Category	L	T	P	C
THEORY							
1.	25AE2203	Aircraft Materials and Processes	PCC	2	0	0	2
2.	25ITXXX	Applied Data Science and Artificial Intelligence	MMC	3	0	0	3
3.	25AE2204/05	Indian Space Mission / Aviation and Safety	LAC	2	0	0	2
4.	25XX	Open Elective I	OEC	3	0	0	3

THEORY CUM LABORATORY							
5.	25AE2251	Low Speed Aerodynamics	PCC	2	0	2	3
6	25AE2252	Aircraft Structural Mechanics I	PCC	2	0	2	3
7	25AE2253	Numerical Methods using MATLAB	VAC	1	0	2	2
PRACTICAL							
6.	25XX	Soft Skills/Aptitude/Foreign Language	AEC	0	0	4	2
7.	25AE2273	Mini Project	ELC	0	0	4	2
Total							22

ITEM No. 8

- It is resolved that the syllabi for the following new Multidisciplinary Elective courses (MDC) under Regulations 2025 be approved and passed.

25ITXXX	Applied Data Science and Artificial Intelligence
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- It is resolved that the syllabi for the following new Ability Enhancement courses (AEC) under Regulations 2025 be approved and passed.

25AE2271	Understanding Design Thinking
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- It is resolved that the syllabi for the following new Skill Enhancement courses (SEC) under Regulations 2025 be approved and passed.

25AE2272	Computing Laboratory
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- It is resolved that the syllabi for the following new Value Added courses (VAC) under Regulations 2025 be approved and passed.

25AE2250	Sustainable Aviation
25AE2253	Numerical Methods using MATLAB

- It is resolved that the syllabi for the following new Liberal Arts courses (LAC) under Regulations 2025 be approved and passed.

Comments:**Dr. R. Senthilraja****Professor & Head, Department of Automobile Engineering,
Government College of Engineering (IRTT), Erode**

- Enquired about industry visits arranged for students.
- Recommended incorporating subject-related industrial visits.
- It was noted that students have already visited SkyX Aerospace and NAL, Bengaluru.
- Suggested adding Psychrometric Chart under Thermodynamics.

Dr. P. R. Thyla**Professor, Department of Mechanical Engineering,
PSG College of Technology, Coimbatore**

- Enquired whether faculty members are trained to handle the newly introduced courses.
- Recommended introducing tutorial hours for Thermodynamics, Fluid Mechanics, and Mechanics of Materials to strengthen conceptual understanding.
- In some courses, the number of hours as in the units and the summary table at the end are to be verified and corrected, if required.

Dr. A. Sameen**Professor, Department of Aerospace Engineering, IIT Madras**

- Fluid Mechanics: Recommended inclusion of Reynolds Transport Theorem.
- Suggested that detailed topics on Laminar, Turbulent, and Advanced Flows may be reconsidered, as the available hours may not suffice.
- Advised to include Gas Dynamics in the curriculum, if feasible.
- Supported introducing Sustainable Aviation after students gain an overall understanding of aeronautical courses (supported by Mr. Ragav).

Dr. S. Periyasamy**Associate Professor, Department of Mechanical Engineering,
Government College of Technology, Coimbatore**

- Suggested verifying whether a vectorial approach has been followed in Fluid Mechanics and Mechanics of Materials.
- Recommended aligning courses with equivalent NPTEL modules for reference and benchmarking.
- Advised that the AIDS course be handled by the AI & DS Department.
- Proposed inclusion of simple data analysis activities using Excel or Python in relevant courses.
- Suggested adding Psychrometric Chart under Thermodynamics.

Dr. Gokul Prasad**Team Lead – MBD-SE, Tata Elxsi**

- Suggested introducing Introduction to LLMs and Prompt Engineering under Foundations of AI & DS.
- Recommended incorporating Multibody Dynamics, Personal Edge, and AME Sim under Numerical Methods.
- Proposed including StateFlow in the Computing Laboratory component.
- Emphasized that Communication Skills training should be more comprehensive, beyond interview preparation; suggested allocating part of internal marks for seminar presentations in all courses to enhance communication abilities.
- Advised broadening the student exposure beyond aerospace, integrating aspects of automotive and control systems by the 3rd semester.
- Encouraged the use of AI tools such as ChatGPT and Claude for code writing and learning support.

Mr. Sree Ragav

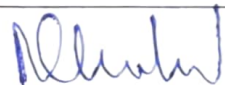
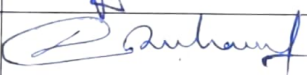
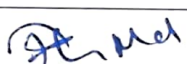
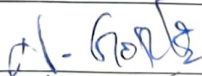
**Aircraft Design Lead, The ePlane Company,
IIT Madras , Chennai**

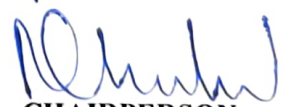
- Stressed the importance of Technical Communication as a core skill to be practiced across courses.
- Suggested that the final module of Fluid Mechanics should include a practical lab visit to wind tunnels.
- For Low Speed Aerodynamics, recommended exposing students to XFLR5 software for aerodynamic analysis.
- Raised concern on the feasibility of Mini Projects in the 3rd semester, given the foundational level of students.
- Proposed interchanging the LAC in the 4th semester with the VAC in the 3rd semester for better curriculum flow.

Prof. P. Chandramohan said the same shall be suggested to the institution for further process.
The following members attended the meeting through online mode.



The meeting concluded with the vote of thanks by Dr.C.J.Thomas Renald Prof/Aero.

Name of the Member	Designation	Signature
Dr. P. Chandramohan	Chairperson	
Dr. P. R. Thyla	University Nominee	Acknowledged through mail
Dr. R. Senthilraja	University Nominee	Acknowledged through mail
Dr. A. Sameen	Subject Expert from other University	Acknowledged through mail
Dr. S. Periyasamy	Subject expert from Parent University	Acknowledged through mail
Mr. Sree Ragav	Industry Expert	
Dr. Gokul Prasad	Meritorious Alumnus	
Dr. C. J. Thomas Renald	Member & Department BoS Coordinator	
Mr. K. Robin Johny	Member	
Mr. C. Dinesh	Member	
Mr. R. Sivakumar	Member	
Mr. V. Siva	Member	
Mrs. S. Rangeetha	Member	
Dr. N. Gopalakrishnan	Member	
Mr. Veeramani	Member	


CHAIRPERSON
BOARD OF STUDIES
 Department of Aeronautical Engineering



SRI RAMAKRISHNA ENGINEERING COLLEGE, COIMBATORE – 22

[Educational Service: SNR Sons Charitable Trust]

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[ISO 9001:2015 Certified and all eligible programmes Accredited by NBA]

**MINUTES OF THE 19th BOARD OF STUDIES MEETING FOR THE UG BE
AERONAUTICAL PROGRAMME HELD ON 22.03.2025 AT 11.30 AM at Aeronautical
Board Room , SREC .**

The following members attended the above meeting.

1. **Dr. P.Chandramohan– Chairperson**
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr. P.R.Thyla- University Nominee**
Professor,
Department of Mechanical Engineering,
PSG College of Technology,
Coimbatore-641 004
3. **Dr.R.Senthilraja – University Nominee**
Prof & Head, Department of Automobile Engineering,
Government College of Engineering (IRTT),
Erode-638 316
4. **Dr. A.Sameen, - Subject Expert from other University**
Professor, Department of Aerospace Engineering,
Indian Institute of Technology- Madras,
Chennai- 600 036
5. **Dr. S.Periyasamy,- Subject expert from Parent University**
Associate Professor,
Department of Mechanical Engineering,
Government College of Technology,
Coimbatore -641 013

6. **Mr.Sree Ragav - Industry member**
Aircraft Design Lead,
The Eplane Company,
IIT Madras , Chennai
7. **Dr. Gokul Prasad (2008-2012) – Meritorious Alumnus**
Team Lead- MBD-SE,
Tata Elxsi, Bengaluru- 560 048
8. **Dr. C. J. Thomas Renald–Member & Department BoS Coordinator**
Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.
9. **Mr. C. Dinesh–Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
10. **Mr.Robin Johny–Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
11. **Mr. R. Sivakumar – Member**
Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
12. **Mr. V.Siva – Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
13. **Mr.Veeramani – Member**
Assistant Professor ,
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022

14. Mrs. S. Rangeetha– Member

Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

15. Dr.N.Gopalakrishnan– Member

Assistant Professor (Sl.G),
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Prof.P.Chandramohan, Chairperson, Board of Studies, chaired the meeting and welcomed all the members to the 18th BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed.

ITEM No.1

- It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2022, 2023 & 2024.
- It is resolved that the following new one credit courses will be included under (Revised) Regulations 2020 for B.E. Aeronautical programme.

S. No.	Course Code	Course	Offered by
1.	20AEI008	Unmanned Vehicles in Search and Rescue Operations	RoboRAM Technologies and Education, Madambakkam, Chennai – 600 126

- It is resolved that the following NPTEL courses are approved for credit transfer during April/May 2025.

S.No.	Course Code	Course Title	Duration	No. of Students opting for Credit Transfer
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1	noc24-ae22	Introduction To Aerospace Engineering - Flight	12 Weeks	01
2	noc24-me123	Fundamentals of Manufacturing Processes	12 Weeks	02

- It is resolved that the Result Analysis for the Academic Year 2024 – 2025 (Semesters VII / V/ III) are approved and passed.

Batch/Semester	Overall Pass Percentage %
Batch 2021 - Semester 7	89.66
Batch 2022 - Semester 5	62.5
Batch 2023 - Semester 3	44.44
Batch 2024 - Semester 1	84.38

Sem: 7

INTERNSHIP	100
COMBUSTION AND EMISSIONS	91.3
GD AND T	100
AIRCRAFT RULES AND REGULATIONS	100
AEROSPACE GUIDANCE AND CONTROL	95.45
HIGH TEMPERATURE MATERIALS	100
PRODUCT DESIGN AND MANUFACTURING (NPTEL)	100
AIRCRAFT DESIGN (NPTEL)	100

Sem: 5

SPACE PROPULSION	100
AVIONICS	90.63
PROPULSION MEASUREMENT PRACTICES LABORATORY	100
HEAT TRANSFER	96.88
CONTROL SYSTEMS IN AERONAUTICS	84.38
PROGRAMMING IN PYTHON	87.5
PROGRAMMING IN PYTHON LABORATORY	100
HIGH SPEED AERODYNAMICS	65.63
FINITE ELEMENT ANALYSIS	93.75
JAVA PROGRAMMING	96.88
EXPERIMENTAL STRESS ANALYSIS	100
PRODUCT DESIGN AND MANUFACTURING (NPTEL)	100
FUNDAMENTALS OF THEORETICAL AND EXPERIMENTAL AERODYNAMICS	100

Sem 3:

AIRCRAFT STRUCTURES LABORATORY	100
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FLUID MECHANICS AND MACHINERY	53.57
THERMODYNAMICS	93.1
MECHANICS OF MATERIALS	96.43
AIRCRAFT SYSTEMS	79.31
MACHINING SCIENCE AND TECHNOLOGY	100
MECHANICAL SCIENCES LABORATORY	100
COMPUTER AIDED DESIGN PRACTICES	100
PROGRAMMING FOUNDATIONS LABORATORY	100
PROGRAMMING FOUNDATIONS	82.76
INTERNET OF THINGS	86.21
PARTIAL DIFFERENTIAL EQUATIONS AND TENSOR CALCULUS	82.76
BIOLOGY FOR ENGINEERS	100

Sem: 1

INDIAN SPACE MISSIONS	100
BASIC FLIGHT SCIENCE	93.75
AERO ENGINEERING WORKSHOP PRACTICES	100
BASIC SCIENCES LABORATORY	100
CHEMICAL SCIENCE	90.33
AIRCRAFT ELECTRICAL AND ELECTRONICS SYSTEMS	100
BASIC ELECTRICAL AND ELECTRONICS LABORATORY	100
COMMUNICATIVE ENGLISH FOR ENGINEERS	100
MATRICES, DIFFERENTIAL CALCULUS AND TRANSFORMS	87.5
WAVES AND OPTICS	100

- It is resolved that the courses and its syllabi be approved for the Honors Specialization / minors in B.E.Aeronautical degree programme

S. No.	Course Code	Course Name	Credits	Mode of Delivery	Offered by
1.	20AE2E23	Fixed Wing UAS – 101	3	Class	SREC
2.	20AE2E24	Rotary Wing UAS – 101	3	Class	SREC
3.	20AE2E25	UAS Aerodynamics	3	Class	SREC
4.	20AE2E26	Applications of UAS	3	Class	Garuda Aerospace, Chennai
5.	20AE2E27	UAS: Safety, Rules and Ethics	3	Class	Garuda Aerospace, Chennai
6.	20AE2E28	Design of Fixed Wing UAS	3	NPTEL	SREC

7.	20AE2E29	Design of Rotary Wing UAS	3	Class	SREC
8.	20AE2E30	Avionics in UAS	3	Class	SREC

- It is resolved that the following Mandatory courses be approved for the student in B.E. Aeronautical degree programme

Batch: 2021 - 2025

S.No	Mandatory Course	Course Code	No. of Students Completed
1.	Yi-YUVA	20MC222	1

Batch: 2022 - 2026

S.No	Mandatory Course	Course Code	No. of Students Completed
1.	Technical certifications	20MC200	29

Batch: 2023 - 2027

S.No	Mandatory Course	Course Code	No. of Students Completed
1.	Nil		

- It is resolved that the following students had completed 4/6 weeks of Internship/Inplant training be approved for the student in B.E. Aeronautical degree programme

Batch: 2021 - 2025

S.No	Industry	No. of Students Completed
1.	Karthi Aquaculture Engineering	1

Batch: 2022 - 2026

S.No	Industry	No. of Students Completed
1.	Texmo Industries	4
2.	Vignesh Machine Tools	2

Batch: 2023 - 2027

S.No	Industry	No. of Students Completed
1.	CMTI, Bangalore	1

R2025

- It is resolved that the Proposed Regulations 2025 (Outcome based Curriculum through Choice based Credit System) be approved and passed.

- It is resolved that Regulations 2025 (Outcome based Curriculum through Choice based Credit System,) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2025 and onwards.
- It is resolved to open Drone Technology as specialization and minors from the academic year 2025-2026 onwards.

Comments:

Dr. A. Sameen

Professor, Department of Aerospace Engineering, IIT Madras

1. **GIAN Courses:** Suggested that GIAN courses may not be suitable for undergraduate students
2. **Attendance Requirements:** Highlighted that for courses with prerequisites, a lack of attendance or unsuccessful completion may impact the student's ability to register for future courses. This needs to be factored into the registration policy.
3. **Assessment of Courses:** Recommended that the *Self-Learning* component could involve students undertaking relevant case studies to enhance analytical and application skills.
4. **Project Assessment:** Proposed that *presentation in a reputed international conference* can be considered as an alternative to publication for project evaluation.
5. **Passing Requirements:** Sought clarification on whether students with arrears are permitted to attend regular classes, and if so, how this is managed.
6. **Course Title & Content Review – Fluid Mechanics and Machinery:** Recommended reviewing the course title and content to ensure alignment with aeronautical engineering applications, suggesting that the current structure might be more suited to general mechanical engineering.
7. **Course Title Correction – Tamils and Technology:** Suggested renaming the course title from "Tamils and Technology" to "Tamil and Technology" for linguistic correctness and clarity.

Dr. R. Senthilraja

Professor & Head,

Department of Automobile Engineering,

Government College of Engineering (IRTT),

Erode

1. **Assessment of Courses:** Recommended that students be encouraged to review and study peer-reviewed journal papers as part of the *Self-Learning* component to instill research orientation and critical thinking.

Dr. S. Periyasamy
Associate Professor,
Department of Mechanical Engineering,
Government College of Technology,
Coimbatore

1. PSOs Review:

- PSO1: Recommended rephrasing to "Apply and integrate fundamental principles".
- PSO2: Suggested rewording as "Develop and apply aeronautical engineering concepts" for clarity and industry relevance.

2. PEO–Mission Mapping: Requested an explanation of the basis for the assigned weightage in the PEO to Mission statement mapping, particularly the sequence 3-2-1.

3. Specialization/Minor Courses:

- Advised renaming the section to better reflect cross-departmental applicability since it is offered to students from other departments.
- Recommended a revision of the syllabus to ensure broader relevance and alignment with current trends.

4. NEP Credit Structure: Enquired about the acceptable credit range as per NEP 2020 guidelines—specifically, what is the maximum permissible beyond the minimum of 160 credits.

5. Direct Self Study (DSS):

- Suggested removing continuous assessment and retaining only an end-semester examination for DSS.
- Proposed reducing DSS credits from 9 to 6 and correspondingly increasing the credit allotment for GIAN courses from 3 to 6.

6. Attendance Requirements:

- Recommended a strict prerequisite enforcement policy whereby students who have not completed the prerequisite course should not be allowed to register for the subsequent course.

7. Assessment Structure:

- Requested clarification on what constitutes *Self-Learning* and *Term Work* in course assessments.

- **Department's Response:** The Internal Quality Assurance Cell (IQAC) will be framing detailed guidelines for Self-Learning and Term Work components.
8. **Laboratory Assessment:**
- Queried the evaluation methodology for Cycle Tests 1 and 2 in lab courses.
 - **Department's Response:** These tests will be evaluated in conjunction with the regular internal assessments of the associated theory courses.
9. **Project Assessment:**
- Suggested that the level of publication required should be specified (e.g., SCOPUS-indexed journals or reputed conferences).
10. **Mathematics Course Titles:** Advised revisiting and appropriately modifying the titles of mathematics-related courses to ensure consistency with standard academic nomenclature and course intent.
11. **Engineering Graphics Course Content:** Requested clarification on the specific components and types of drawings that students are expected to create as part of the Engineering Graphics and 3D Modelling course. Suggested ensuring coverage of both conventional and CAD-based drawing techniques relevant to aeronautical applications.

Dr. P. R. Thyla
Professor & Head, Department of Mechanical Engineering,
PSG College of Technology,
Coimbatore

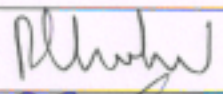
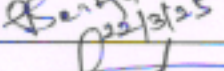
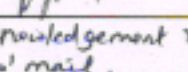
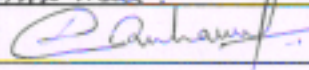
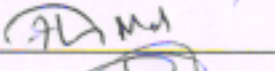
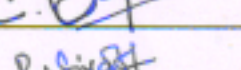
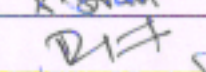
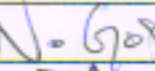
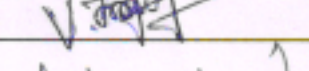
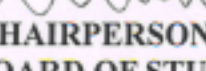
1. **Course Dropping Policy:** Enquired whether students who drop a course are allowed to register for the same in the immediate following semester or have to wait until the next academic year. Clarification is needed on the flexibility and timeline for course re-registration.
2. It is also recommended for manual drafting and design of machine elements.

Dr. Gokul Prasad
Team Lead- MBD-SE,
Tata Elxsi

1. Considering the current requirement in the aerospace industry, apart from various tools they learn, they can be given an "Introduction to various certifications like DO160, DO178,..."
2. Projects to combine their cross-functional courses with aero courses (example - AI & UAV) can be encouraged

Prof.P.Chandramohan said the same shall be suggested to the institution for further process.

The meeting conclude with the vote of thanks by Dr.C.J.Thomas Renald ASP/Aero .

Name of the Member	Designation	Signature
Dr. P.Chandramohan	Chairperson	
Dr.P.R.Thyla	University Nominee	
Dr.R.Senthilraja	University Nominee	
Dr. A.Sameen	Subject Expert from other University	
Dr. S.Periyasamy	Subject expert from Parent University	
Mr.Sree Ragav	Industry Expert	
Dr. Gokul Prasad	Meritorious Alumnus	
Dr. C. J. Thomas Renald	Member & Department BoS Coordinator	
Dr. Robin Johny	Member	
Mr. C. Dinesh	Member	
Mr. R. Sivakumar	Member	
Mrs. S. Rangeetha	Member	
Dr.N.Gopalakrishnan	Member	
Mr.Veeramani	Member	
Mr. V.Siva	Member	



CHAIRPERSON
BOARD OF STUDIES

Department of Aeronautical Engineering

**SREC**

Thomas Renald <thomasrenald.joseph@srec.ac.in>

Fwd: 19th BOS minutes- Rsg

2 messages

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Sree Raghav <ragav@eplane.ai>

Fri, Apr 11, 2025 at 9:54 AM

Sir,

PFA the 19th BoS meeting minutes for your reference.
Pls acknowledge the same through mail Sir.

With Regards

Dr C.J.Thomas Renald
9894956436

----- Forwarded message -----

From: **Mohanraj D** <mohanraj.d@srec.ac.in>
Date: Fri, 11 Apr 2025, 09:45
Subject: 19th BOS
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sir,

PFA,

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19th BOS Meeting.pdf
8932K

Sree Raghav <ragav@eplane.ai>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Mon, Apr 21, 2025 at 10:09 AM

Sir
Thanks for sharing
I acknowledge the points captured in the document.

Regards

Sree Raghav
Dy. CoD,
Head - Conceptual & Preliminary Design

[Quoted text hidden]



SRI RAMAKRISHNA ENGINEERING COLLEGE, COIMBATORE – 22

[Educational Service: SNR Sons Charitable Trust]

[Autonomous Institution, Reaccredited by NAAC with 'A+' Grade]

[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]

[ISO 9001:2015 Certified and all eligible programmes Accredited by NBA]

**MINUTES OF THE 18th BOARD OF STUDIES MEETING FOR THE UG BE
AERONAUTICAL PROGRAMME HELD ON 18.11.2024 AT 11.00 AM through ONLINE
mode .**

Gmeet Link: <https://meet.google.com/cjq-wmww-qxh>

- 1. Dr. P.Chandramohan– Chairperson**
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore–641 022.
- 2. Dr. P.R.Thyla- University Nominee**
Professor & Head,
Department of Mechanical Engineering,
PSG College of Technology,
Coimbatore-641 004
- 3. Dr.R.Senthilraja – University Nominee**
Prof & Head, Department of Automobile Engineering,
Government College of Engineering (IRTT),
Erode-638 316
- 4. Dr. A.Sameen, - Subject Expert from other University**
Professor, Department of Aerospace Engineering,
Indian Institute of Technology- Madras,
Chennai- 600 036
- 5. Dr. S.Periyasamy,- Subject expert from Parent University**
Associate Professor,
Department of Mechanical Engineering,
Government College of Technology,
Coimbatore -641 013

6. **Dr. Gokul Prasad (2008-2012)** – Meritorious Alumnus
Team Lead- MBD-SE,
Tata Elxsi, Bengaluru- 560 048
7. **Dr. C. J. Thomas Renald**–*Member & Department BoS Coordinator*
Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.
8. **Mr. C. Dinesh**–*Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
9. **Dr. R. Rang Raj**–*Member*
Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
10. **Mr. R. Sivakumar** – *Member*
Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
11. **Mr.Veeramani** – *Member*
Assistant Professor ,
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022
12. **Mrs. S. Rangeetha**– *Member*
Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
13. **Dr.N.Gopalakrishnan**– *Member*
Assistant Professor (Sl.G),
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Mr. Sree Ragav - Industry Expert has informed his non availability due to his prior commitment and has communicated the comments in the syllabus content priorly.

Prof.P.Chandramohan, Chairperson, Board of Studies, chaired the meeting and welcomed all the members to the 18th BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed.

ITEM No.1

- It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./ B.Tech. programmes for students admitted in the Academic year 2021 & onwards.

ITEM No.2

- It is resolved that the following new one credit course will be included under (Revised) Regulations 2020 for B.E. Aeronautical Engineering programme.

S.No	Course Code	Course	Hours	Offered by
1.	20AEI007	Applied Flight Mechanics: Stability, Control, and Real-World Testing	15	The Company, ePlane IIT Madras

Comment:

Dr.A.Sameen IITM suggested the syllabus of applied flight mechanics is general in nature and expressed the content is too large to be covered in 15 hours. He suggested to fine tune the syllabus content in order to teach the course without formula as it is open to the students of all programmes.

Dr.S.Periyasamy suggested to remove the fuel systems and thermodynamics included in the syllabus content.

Dr.Gokul Prasad suggested that the syllabus looks good if practical classes with the flight models are handled.

Prof. Chandramohan Chairperson said all the suggestions will be discussed with the industry person and the syllabus will be suitably framed.

Action taken: The industry person has responded with the suggestions of the board members and re-drafted the syllabus with few changes.

ITEM No.3

- It is resolved that the following NPTEL courses are approved for credit transfer during Nov/Dec 2024.

S.No.	Course Code	Course Title	Duration
1	noc24-ae24	Introduction to Aircraft Design	12 Weeks
2	noc24-ae19	Aero engine Gas Turbine Cycles	12 Weeks
3	noc24-ae22	Introduction To Aerospace Engineering - Flight	12 Weeks
4	noc24-ae14	Design of Fixed Wing Unmanned Aerial Vehicles	08 Weeks
5	noc24-ae20	Space Flight Mechanics	12 Weeks
6	noc24-me123	Fundamentals of Manufacturing Processes	12 Weeks
7	noc24-me135	Advanced Thermodynamics and Combustion	12 Weeks
8	noc24-ge42	Introduction to Biomimicry	08 Weeks
9	noc24-me81	Product Design And Development	04 Weeks
10	noc24-ae18	Smart Structures	12 Weeks

ITEM No.4

- It is resolved that the Result Analysis for the Academic Year 2023 – 2024 (Semesters VIII / VI/ IV/II) are approved and passed.

Semester VIII: Overall Pass percentage -100 %

Course Name	Pass %
Internship	100
Project Work	100

Semester VI: Overall Pass percentage -93.1 %

Course Name	Pass %
Vibration and Structural Health Monitoring	96.55
Aircraft Maintenance Engineering	100
Aircraft Stability and Control	96.55
Analysis and Design of Composite Structures	96.55
Computational Fluid Dynamics	93.1
Autonomous Aerial Robotic Systems	93.1
Mini Project II	100
Flight Training Laboratory	100
Aircraft Design Project	100
UAS: Safety, Rules and Ethics	96.55
Futuristic Frames and its Techniques	100

Semester IV: Overall Pass percentage -45.16 %

Course Name	Pass %
Low Speed Aerodynamics	78.13
Air Breathing Propulsion	68.75
Aircraft Structural Mechanics	64.52
Aircraft Performance	71.88
Mini Project I	100
Low Speed Aerodynamics Laboratory	100
Aircraft Structures Laboratory	100
Data Structures and Algorithm Analysis Laboratory	100
Data Structures and Algorithm Analysis	96.88
Digital and Embedded Systems	93.75
Transforms, Probability and Statistics	56.25
Biology for Engineers	100
Digitisation in Aeronautics and Space	100

Semester II: Overall Pass percentage -62.07 %

Course Name	Pass %
Aviation Management	100
Computing Laboratory	100
Engineering Drawing Practices	100
Artificial Intelligence	96.55
Aerospace Sensors and Instrumentation	100
Aerospace Sensors and Instrumentation Laboratory	100
Aircraft Materials and Processes	100
Engineering Mechanics	65.52

Basic Japanese	100
Calculus and Numerical Methods	89.66
Basic German	100
Intermediate English for Engineering	100

Comment: Dr.P.R. Thyla -University Nominee and Dr.Senthilraja -University Nominee asked the reasons for low pass percentages in the 2nd and 4th semesters.

Prof.Chandramohan Chairperson said few analytical papers and mathematical papers have pulled down the overall pass percentage.

Action taken: Remedial classes helpful for slow learners are arranged and extra care is taken for improvement in pass percentage.

ITEM No.5

- It is resolved that the following candidates who have registered for additional credits during Nov/Dec 2024 examination under the Specialization courses category Verticals shall be approved according to the communication from Anna University, Chennai via Letter No. 5749/AU/CAC/Honours/2022 dated 16.11.2022.

Specialization Course Details	Course Code and Title	Register No. of the Candidate	Name	CGPA
Drone Technology	20AE2E29 - Design of Rotary Wing UAS & 20AE2E30 - Avionics in UAS	71812108001	ARJUN M P	7.5
		71812108002	ARUNATHIRAJA S	7
		71812108003	BALAMBIKA S	7.75
		71812108004	BALANAVEEN C	6.75
		71812108006	GIRITHEES S	7
		71812108007	HARI HARA SUDHAN	6.25
		71812108010	HARITHA A	8.25
		71812108013	KAUSHIK S	7.5
		71812108016	MERLIN SILVIA A	8
		71812108018	SAMURAJA A	6.75
		71812108021	SWETHA K	6.75
		71812108022	THENMOZHI V	7.75
		71812108026	VISHNU HARI D	8
		71812108031	KISHORE NARAYANA S	7
		71812108032	PRINCE SINGH M	6.5

ITEM No: 6

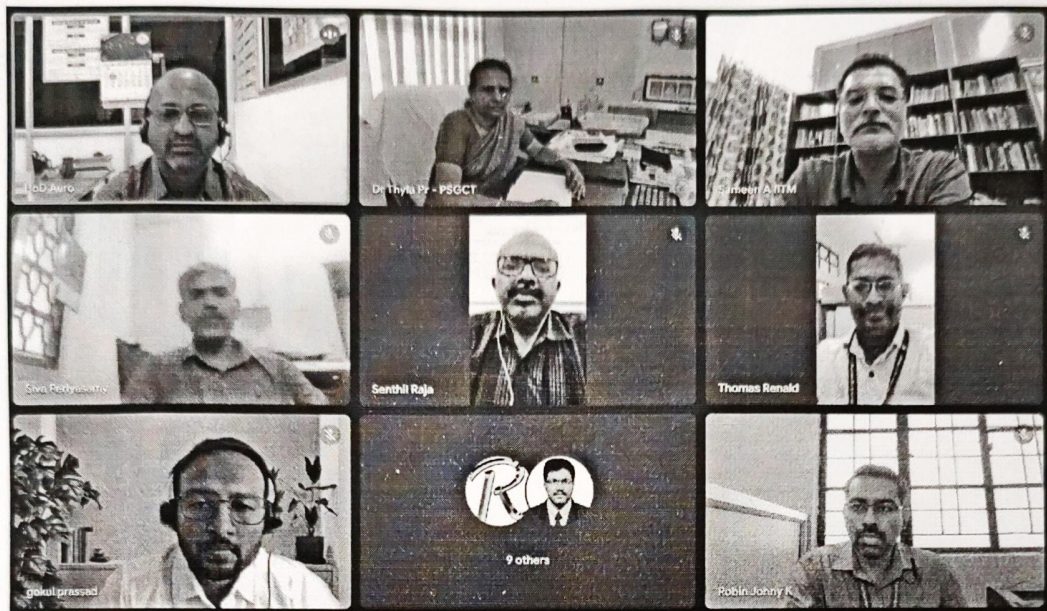
PROPOSED VISION	PROPOSED MISSION
To become a world class university excelling in multidisciplinary engineering education through cutting-edge technologies and impactful societal contributions for sustainable development	Provide quality education that builds strong technical, analytical and managerial skills for future professionals. <i>(Deliver Quality Engineering Education) (M1)</i>
	Nurture creativity, innovation and research ecosystem for local and global needs <i>(Encourage Research and Innovation) (M2)</i>
	Foster ethics, leadership, entrepreneurial and life skills for holistic development <i>(Foster Holistic Growth) (M3)</i>
	Develop technological solutions that enhance sustainability and societal well-being through collaborations <i>(Contribute to Sustainable Development) (M4)</i>

Key Indicators	M1	M2	M3	M4
Multidisciplinary Engineering	3	2	3	2
Cutting-edge technologies	3	3	2	3
Impactful societal contributions	3	2	2	3
Sustainable development	2	2	3	3

Comment: Dr. A.Sameen IITM & Dr.P.R.Thyla suggested that the words “through cutting edge technologies” does not hold good in the proposed Vision statement and suggested the same as “through cutting edge innovations or research”.

Prof.P.Chandramohan said the same shall be suggested to the institution for further process.

The meeting conclude with the vote of thanks by Dr.C.J.Thomas Renald ASP/Aero .



Name of the Member	Designation	Signature
Dr. P.Chandramohan	Chairperson	
Dr.P.R.Thyla	University Nominee	Acknowledgement obtained thro' mail
Dr.R.Senthilraja	University Nominee	Acknowledgement obtained thro' mail
Dr. A.Sameen	Subject Expert from other University	Acknowledgement obtained thro' mail
Dr. S.Periyasamy	Subject expert from Parent University	Acknowledgement obtained thro' mail
Mr.Sree Ragav	Industry Expert	Acknowledgement obtained thro' mail
Dr. Gokul Prasad	Meritorious Alumnus	Acknowledgement obtained thro' mail
Dr. C. J. Thomas Renald	Member & Department BoS Coordinator	
Dr. R. Rang Raj	Member	
Mr. C. Dinesh	Member	
Mr. R. Sivakumar	Member	
Mrs. S. Rangeetha	Member	
Dr.N.Gopalakrishnan	Member	
Mr.Veeramani	Member	
Mr.Robin Johnny	Member	

CHAIRPERSON

BOARD OF STUDIES

Department of Aeronautical Engineering



18th BoS minutes-Aero Board - Reg

8 messages

HoD Aero <hod-aero@srec.ac.in>

Fri, Nov 22, 2024 at 1:42 PM

To: prt.mech@psgtech.ac.in, Senthil Raja <senthilrajairtt@gmail.com>, gokul.s5@tataelxsi.co.in, gokul prasad <thegokul.a5@gmail.com>, ragav@eplane.ai, sameen <sameen@ae.iitm.ac.in>, speriyasamy@gct.ac.in

Respected Sir/Madam,

PFA the minutes of 18th BoS meeting - Aero Board and one credit course syllabus (Revised as per recommendation) for your perusal. We request you to acknowledge the same at the earliest.

Thank you

Thanks and regards
P.Chandramohan
Professor & Head
Department of Aeronautical Engineering
Sri Ramakrishna Engineering College
Coimbatore 641022
7530089997 : Ext 340
Mobile: +91 94867 71077
Website : www.srec.ac.in

2 attachments



18 Aero BOS Minutes.doc

179K



One Credit Course_ePlane (1) (2).docx

13K

gokul prasad <thegokul.a5@gmail.com>

Fri, Nov 22, 2024 at 2:25 PM

To: HoD Aero <hod-aero@srec.ac.in>

Cc: prt.mech@psgtech.ac.in, Senthil Raja <senthilrajairtt@gmail.com>, gokul.s5@tataelxsi.co.in, ragav@eplane.ai, sameen <sameen@ae.iitm.ac.in>, speriyasamy@gct.ac.in

Dear sir,

The resolutions to the suggestions are satisfactory. Thank you for considering the suggestions and taking apt action towards them.

-

warm regards
Gokul Prasad S., Ph.D

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[Quoted text hidden]

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S PERIYASAMY <speriyasamy@gct.ac.in>
To: HoD Aero <hod-aero@srec.ac.in>

Sat, Nov 23, 2024 at 7:30 PM

Dear sir

It is very nicely corrected and I acknowledge the same. .

[Quoted text hidden]

[Quoted text hidden]

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--

With regards

Dr.S.PERIYASAMY,
Department of Mechanical Engineering,
Government College of Technology,
Coimbatore - 641013.
<https://scholar.google.com/citations?hl=en&user=QkJk3xQAAAAJ>
<https://orcid.org/0000-0002-6908-2011>
Web of Science ResearcherID: X-2360-2018

Scopus id :55111321200

Mobile: 8754030606

Dr Thyla Pr - PSGCT <prt.mech@psgtech.ac.in>
To: HoD Aero <hod-aero@srec.ac.in>

Mon, Nov 25, 2024 at 3:28 PM

Cc: Senthil Raja <senthilrajairtt@gmail.com>, gokul.s5@tataelxsi.co.in, gokul prasad <thegokul.a5@gmail.com>, ragav@eplane.ai, sameen <sameen@ae.iitm.ac.in>, speriyasamy@gct.ac.in

I approve the minutes of the BoS meeting.

With thanks and regards,

Dr P R Thyla
Professor and Head
Department of Mechanical Engineering
PSG College of Technology
Coimbatore - 641004, Tamilnadu, India.

On Fri, Nov 22, 2024 at 1:42 PM HoD Aero <hod-aero@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]

Senthil Raja <senthilrajairtt@gmail.com>
To: Dr Thyla Pr - PSGCT <prt.mech@psgtech.ac.in>

Mon, Nov 25, 2024 at 5:45 PM

Cc: HoD Aero <hod-aero@srec.ac.in>, gokul.s5@tataelxsi.co.in, gokul prassad <thegokul.a5@gmail.com>, ragav@eplane.ai, sameen <sameen@ae.iitm.ac.in>, speriyasamy@gct.ac.in

I approve minutes of BoS meeting.
Thank you,
Dr. R. Senthilraja
HOD i/c Automobile Engineering
Government College of Engineering
Erode - 638316

[Quoted text hidden]

sameen <sameen@ae.iitm.ac.in> Tue, Nov 26, 2024 at 9:00 AM
To: Senthil Raja <senthilrajairtt@gmail.com>
Cc: Dr Thyla Pr - PSGCT <prt.mech@psgtech.ac.in>, HoD Aero <hod-aero@srec.ac.in>, gokul.s5@tataelxsi.co.in, gokul prassad <thegokul.a5@gmail.com>, ragav@eplane.ai, speriyasamy@gct.ac.in

approved..

A. Sameen
Professor,
Department of Aerospace Engineering
Indian Institute of Technology Madras,
Chennai 600 036

Phone: (044)2257-4013
<https://home.iitm.ac.in/sameen>
<http://iitm.irins.org/profile/50701>

[Quoted text hidden]

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Website : www.srec.ac.in [1]

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Links:

[1] <http://www.srec.ac.in>

Sree Raghav <ragav@eplane.ai> Tue, Nov 26, 2024 at 1:52 PM
To: HoD Aero <hod-aero@srec.ac.in>
Cc: prt.mech@psgtech.ac.in, Senthil Raja <senthilrajairtt@gmail.com>, gokul.s5@tataelxsi.co.in, gokul prassad <thegokul.a5@gmail.com>, sameen <sameen@ae.iitm.ac.in>, speriyasamy@gct.ac.in

Dear Sir
Thanks for sharing the Minutes.
I could see the information captured with great clarity.
The information is satisfactory.

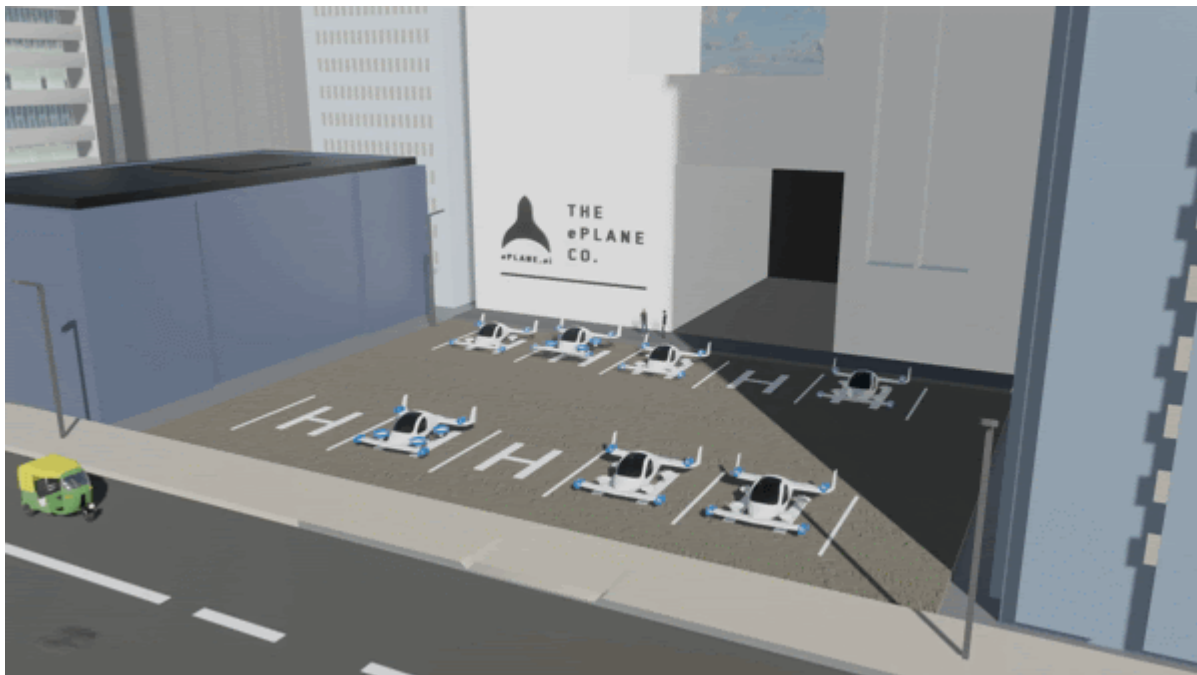
On Fri, Nov 22, 2024 at 1:42 PM HoD Aero <hod-aero@srec.ac.in> wrote:

[Quoted text hidden]

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--

Regards,
Sree Raghav R,
Head - Conceptual & Preliminary design of Aircraft,
The ePlane Company (eplane.ai),
IIT-Madras.
What are we building? [Meet the Indian startup building an affordable electric 'flying taxi'](#)



+91 8088018463 | [linkedin.com/in/sree-raghav-ab539331](https://www.linkedin.com/in/sree-raghav-ab539331)

(ePlane is regd. as Ubify technologies Private Limited)

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Senthil Raja <senthilrajairtt@gmail.com>
To: HoD Aero <hod-aero@srec.ac.in>

Tue, Nov 26, 2024 at 4:00 PM

I approve the minutes of the 18 th Board of studies meeting.

Thank you,

Dr.R.Senthilraja,
Assistant Professor,
Department of Mechanical Engineering,
Institute of Road and Transport Technology,
Erode - 638 316

On Fri, Nov 22, 2024 at 1:42 PM HoD Aero <hod-aero@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]

Applied Flight Mechanics: Stability, Control, and Real-World Testing

Course Outcome

Gain practical insights into flight test anomalies through the principles of flight mechanics, enhancing both theoretical knowledge and practical application in aircraft stability and control in the design phase.

Module I

Introduction to Flight Mechanics: Overview of Aircraft Components and Forces: Aerodynamic, Propulsive, and Gravitational forces; their moments and interactions - Control Surfaces - Stability and Control Principles: Importance of stability - case studies.

Mass and Balance Properties: Key Definitions and Case Studies - Influence on Flight Dynamics and Control - Mass, Moment of Inertia, and their roles in stability and control.

Module II

Flight Mechanics Parameters- Stability Concepts: Definitions - coefficients - damping factors - Dutch roll and the interaction between flight modes; understanding the importance of stability.

Control Mechanics: Definitions - coefficients - damping factors and interpreting coefficient plots - Single-Engine Stability - Anomalies - Impact of atmospheric disturbances on stability and control

Total Hours: 15



SRI RAMAKRISHNA ENGINEERING COLLEGE, COIMBATORE – 22

[Educational Service: SNR Sons Charitable Trust]

[Autonomous Institution, Reaccredited by NAAC with 'A+' Grade]

[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]

[ISO 9001:2015 Certified and all eligible programmes Accredited by NBA]

**MINUTES OF THE 17th BOARD OF STUDIES MEETING FOR THE UG BE
AERONAUTICAL PROGRAMME HELD ON 06.04.2024 AT 11.00 AM-**

The following members attended the above meeting.

1. **Dr. J. David Rathnaraj – Chairperson**
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr. M. Sreekumar - University Nominee**
Professor & Head,
Centre for AI, IoT and Robotics,
IITDM Kancheepuram,
Vandalur - Kelambakkam Road,
Chennai - 600 127
3. **Dr. J. Bruce Ralphin Rose - Subject Expert**
Associate Professor,
Department of Aeronautical Engineering,
Anna University Regional Campus,
Tirunelveli - 627 007
4. **Dr. Ranjith Mohan – Subject Expert from other University**
Assistant Professor,
Department of Aerospace Engineering,
IIT Madras.
5. **Dr. Balasundaram M (2010 – 2014) – Meritorious Alumnus**
Research Engineer,
Green Aero,
IIT Delhi.

6. **Dr. C. J. Thomas Renald**–*Member & Department BoS Coordinator*

Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.

7. **Mr. C. Dinesh**–*Member*

Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

8. **Dr. R. Rang Raj**–*Member*

Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

9. **Mr. R. Sivakumar** – *Member*

Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

10. **Dr. Nagarajapandian** – *Member*

Assistant Professor (Sl.Gr),
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022

11. **Mrs. S. Rangeetha**– *Member*

Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

12. **Mr. Y.J.Ganesh**– *Member*

Assistant Professor (Sl.G),
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Mr. Mohamed Ibrahim Mohideen - Industry Expert and **Dr.Ranjith Mohan – Expert from other University** has informed to be available in hybrid mode due to their prior commitment.

Prof.J.David Rathnaraj, Chairperson, Board of Studies, chaired the meeting and Dr.C.J.Thomas Renald BoS coordinator- Aero Board welcomed all the members to the 17th BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were discussed and approved.

- It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2021 & onwards.
- It is resolved that the following new one credit courses will be included under (Revised) Regulations 2020 for B.E. Aeronautical Engineering programme.

S.No	Course Code	Course Title	Offered by
1	20AEI005	GD & T	GKD Institute of Technological Resources
2	20AEI006	Aircraft Static Stability using CFD	The ePlane Company (Ubifly Technologies Pvt Ltd), Chennai

- It is resolved that the following NPTEL courses are approved for credit transfer during April/May 2024.

S.No.	Course Code	Course Title	Duration	Students Registered
1	noc24-mm07	Carbon Materials and Manufacturing	12 Weeks	1
2	noc24-me58	Product Design and Manufacturing	12 Weeks	10

3	noc24-ge15	Entrepreneurship Essentials	12 Weeks	2
4	noc24-ae02	Aircraft Design	12 Weeks	17
5	noc24-ae04	Fundamentals of Theoretical and Experimental Aerodynamics	12 Weeks	3

- It is resolved that the Result Analysis for the Academic Year 2023 – 2024 (Semesters VII / V/ III) are approved and passed.

NOV 2023			Result After Moderation			
			AERO –VII Sem			
S.No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
1	20AE2E08	Combustion And Emission	29	26	3	89.66
2	20AE2E16	Aircraft Rules And Regulations	29	28	1	96.55
3	20AE2E22	Aerospace Guidance And Control	29	29	0	100
4	NOC23-ME13	Computer Integrated Manufacturing	2	2	0	100
5	20AE2E10	High Temperature Materials	26	25	1	96.15
6	NOC22-ME134	Product Design And Development	1	1	0	100

7	NOC23-DE06	Design, Technology And Innovation	1	1	0	100
Over all Pass Percentage After Moderation			26/29 = 89.66%			

NOV 2023			Result After Moderation			
			AERO – V Sem			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
Theory						
1	20AE213	Space Propulsion	29	28	1	96.55
2	20AE252	Avionics	29	29	0	100
3	20AE278	Propulsion Measurement Practices Laboratory	29	29	0	100
4	20AE2E07	Heat Transfer	28	20	8	71.43
5	20EI218	Control Systems In Aeronautics	29	29	0	100
6	20IT241	Programming In Python	29	26	3	89.66
7	20IT291	Programming In Python Laboratory	29	29	0	100
8	20AE212	High Speed Aerodynamics	29	25	4	86.21
9	20AE253	Finite Element Analysis	29	27	2	93.1
10	20RA2E56	Exploring Controller For	5	5	0	100

		Robotics				
11	20AE2E04	Experimental Stress Analysis	9	8	1	88.89
12	20AE2E24	Rotary Wing UAS - 101	15	15	0	100
13	20AE2E25	UAS Aerodynamics	15	15	0	100
14	20MA2E03	Operations Research	3	3	0	100
15	20ME2E52	Engineering Economics	2	2	0	100
16	20MA2E04	Statistics For Big Data Analytics	7	7	0	100
17	20EI2E12	Programmable Logic Controller	5	5	0	100
18	20EC2E57	Joy Of Electronics	1	1	0	100
19	20MA2E02	Mathematics For Machine Learning	2	2	0	100
20	20EE2E54	Electric And Hybrid Vehicles	1	1	0	100
21	20NT2E02	Nanotechnology In Environmental Remediation	1	1	0	100
22	20AD2E53	Software Development Essentials	1	1	0	100
23	20EN2E03	Generic Skills For Employability	1	1	0	100
Over all Pass Percentage After Moderation					17/29 = 58.62%	

NOV 2023			Result After Moderation			
			AERO- III Sem			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
Theory						
1	20AE204	Fluid Mechanics And Machinery	32	26	6	81.25
2	20MA210	Partial Differential Equations And Tensor Calculus	32	19	13	59.38
3	20AE205	Thermodynamics	32	18	14	56.25
4	20AE206	Mechanics Of Materials	32	21	11	65.63
5	20AE207	Aircraft Systems	32	31	1	96.88
6	20AE251	Machining Science And Technology	32	30	2	93.75
7	20AE273	Mechanical Sciences Laboratory	32	32	0	100
8	20AE274	Computer Aided Design Practices	32	32	0	100
9	20CS291	Programming Foundations Laboratory	32	32	0	100
10	20CS241	Programming Foundations	32	26	6	81.25
11	20EC2E54	Internet Of Things	31	30	1	96.77
12	20HS211	Heritage Of Tamils	18	18	0	100
13	20AE271	Computing Laboratory	1	1	0	100
Over all Pass Percentage After Moderation			14 / 31 = 45.16%			

Jan 2024			Result After Moderation			
			AERO- I Sem			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
1	20AE201	Indian Space Missions	29	29	0	100
2	20AE202	Basic Flight Science	29	23	6	79.31
3	20AE270	Aero Engineering Workshop Practices	29	29	0	100
4	20BS270	Basic Sciences Laboratory	29	29	0	100
5	20CH202	Chemical Science	29	29	0	100
6	20EC202	Aircraft Electrical And Electronics Systems	29	28	1	96.55
7	20EC270	Basic Electrical And Electronics Laboratory	29	28	1	96.55
8	20HS208	Communicative English For Engineers	29	29	0	100
9	20HS211	Heritage Of Tamils	29	29	0	100
10	20MA202	Matrices, Differential Calculus And Transforms	29	21	8	72.41
11	20PH202	Waves And Optics	29	29	0	100
Over all Pass Percentage After Moderation			18 / 29 = 62.07%			

- It is resolved that the new courses and its syllabi be approved for the Honors Specialization / minor in B.E. Aeronautical Engineering degree programme

S.No	Course Code	Course Title	Credits	Mode of Delivery	Offered by
1	20AE2E28	Design of Fixed Wing UAS	3	Class Room	Internal
2	20AE2E29	Design of Rotary Wing UAS	3	Class Room	Internal
3	20AE2E30	Avionics in UAS	3	Class Room	Internal

- It is resolved that the following specialization/minor courses are offered during the even semester of Academic Year 2023 – 2024 and the following eligible students be approved for the Honors Specialization / minor in B.E. Aeronautical Engineering degree programme.

Drone Technology	20AE2E26 – Application of UAS noc24-ae02 - Aircraft Design	71812108026	Vishnu Hari. D	8.44
		71812108002	Arunathiraja S	7.60
		71812108013	Kaushik.S	8.34
		71812108001	Arjun.MP	8.40
		71812108021	Swetha K	7.82
		71812108010	Haritha A	8.94
		71812108016	Merlin Silvia. M	8.69
		71812108022	V.Thenmozhi	8.45
		71812108003	Balambika S	9.10

- It is resolved that the following Mandatory courses be approved for the student in B.E. Aeronautical degree programme.

Batch: 2020 - 2024

S.No	Mandatory Course	Course Code	No. of Students Completed
1.	Leadership and Workplace Etiquette	20MC208	27
2.	Technical Certification	20MC275	2
3	Employability and Enhancement Course EEC	20MC291	25

Batch: 2021 – 2025

S.No	Mandatory Course	Course Code	No. of Students Completed
1	SEDS	20MC082	20
2.	Yi YUVA	20MC222	6
3.	Leadership and Workplace Etiquette	20MC208	1
4.	Technical Certification	20MC275	29

- It is resolved that the following students had completed 4/6 weeks of internship/ inplant training be approved for the student in B.E. Aeronautical Engineering degree programme

2020-2024		
S.No.	Industry	Beneficiaries
1.	Micro Form Automation, Coimbatore	2
2.	Sundaram Industries Private Limited, Madurai	1
3.	Brakes India Private Limited, Chennai	2
4.	Vaayusastra Aerospace, Chennai (2 weeks)	15(1 credit)
5.	IIT Madras, Chennai	1
6.	Kannan Tools and Dies, Coimbatore	1
7.	Bangalore Aircraft Industries Pvt. Ltd., Bengaluru	6
8.	Airports Authority of India, Coimbatore	4
9.	Chakradhara Aerospace and Cargo Pvt. Ltd., Coimbatore	4
10.	Sun V Technology, Coimbatore	2
11.	Pricol Limited, Coimbatore	1
12.	Nudhana Industries, Coimbatore	2
13.	DOTWORLD Technologies, Coimbatore	1
14.	The ePlane Company, Chennai	1
15.	Surfine Tools, Coimbatore	2

2021-2025		
S.No	Industry	Beneficiaries
1.	Central Manufacturing Technology Institute, Bengaluru	2
2.	NIT, Trichirappalli	5
3.	Vaayusastra Aerospace, Chennai(2 Weeks)	1(1 credit)
4.	IIT Madras (2 Weeks)	9 (1 credit)

Industry Interactions:

Industries	Interactions
Capgemini	11 students placed
Chakradhara Aerospace and Cargo (P) Ltd., Coimbatore Mr. A. Loganathan; Head – Assembly	4 Students completed internships - Project consultancy - Discussions on MoU
Garuda Aerospace, Chennai	- Guest Lecture 1 week faculty immersion (2 faculties completed) - Drone Pilot Licensing (2 students licensed + 1 undergoing) - Adjunct Faculty for the Professional elective course on UAS Safety Rules & Ethics
Garudan Unmanned Systems Pvt. Ltd., Coimbatore	- Signed MoU - Drone components supply - Internships - Joint proposal submit to SERB-PURSE - RPTO – Third party connect
Industries	Interactions
Dedienne Aerospace Mr. C. Ashwin, Quality Head - India	Handled Design thinking Course (2 Days)

Smart Dimensions Engineering Services, CBE Mr. D. Pradeep, Founder	• Internships and Job conversions • 1 student placed
Zephyr Aerospace Pvt. Ltd., Coimbatore Mr. N. Kalyanaraman Manager – Airport Operations	• Inaugurated the AEA 2023 • 1 credit course (CESSNA and Jet Engine) – in process
Bharathy Aerospace Pvt. Ltd., Coimbatore Prof. Elangovan, Director Ex-Scientist/ISRO	• Delivered a lecture for FDTP • Discussions on MoU • Setting Drone Manufacturing facilities at SREC • Interested in Adjunct Faculty
MATHWORKS – ARC Informatics	• Suhadev of III year-Aero received appreciation certificate • UAV Toolbox training • Support for Drone competition organized by MATHWORKS

Suggestions from Expert members

Dr.M.Sreekumar- University Nominee

- Power plant selection is In general
- Solar powered UAVs to be incorporated.
- Swarm Intelligence – product outcome perspective –low cost hardware is not reliable.
- Python language knowledge to enhanced by faculty members.
- Faculty immersion programmes- QIP- to be implemented at reputed institution.

Dr.Bruce Ralphin Rose

- Location of powerplant to be covered.
- Aircraft Design syllabus to be referred.
- Future design consideration- uniform loading- shock absorption- power plant selection to be mentioned.
- Roboflow image processing- python language- Active learning method assignments may be implemented along with Matlab aerospace blockset.

Dr.Ranjith Mohan- Subject Expert

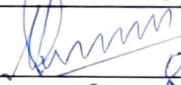
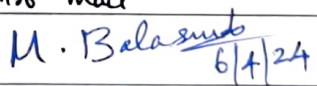
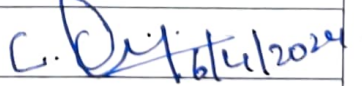
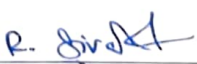
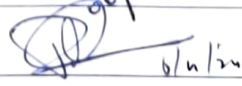
- Few topics repeated from Flight stability and control and Aircraft performance
- Design Philosophy hours allocation
- Propeller efficiency after Blade Element theory
- Categorize whether its electrical/Solar/IC Engine – prespective UAVs

Dr.Balasundaram

- Guest lectures to be resourced through PhD Scholars from reputed institutions
- Prespective of UAV to be focused.

Mr.P.Sivakumar AP(Sr G)/Aero proposed the vote of thanks and the meeting was concluded.

Declaration: I have read and understood the minutes of 17th BoS meeting – Aero Board and give my consent for the same.

S.No	Name of the Member	Designation	Signature
1	Dr. J. David Rathnaraj	Chairperson	
2	Dr. M. Sreekumar	University Nominee	
3	Dr. Bruce Ralphin Rose	Subject Expert	
4	Mr. Mohamed Ibrahim Mohideen	Industry Expert	Acknowledgement obtained thro' mail
5	Dr. Ranjith Mohan	Subject Expert from Other University	Acknowledgement obtained thro' mail
6	Dr. Balasundaram M	Meritorius Alumnus	
7	Dr. C. J. Thomas Renald	Member & BoS Coordinator	
8	Mr. C. Dinesh	Internal Member	
9	Mr. R. Sivakumar	Internal Member	
10	Dr. R. Ranga Raj	Internal Member	
11	Mr. K. Robin Johny	Internal Member	

12	^M Dr. Nagarajapandian	Internal Member/EIE	<i>M. Nagarajapandian</i>
13	^A Mrs. S. Rangeetha	Internal Member/ECE	<i>S. Rangeetha</i>
14	Mr. Y.J.Ganesh	Internal Member/Maths	<i>Y.J. Ganesh</i>


CHAIRPERSON
BOARD OF STUDIES
 Department of Aeronautical Engineering
Chairman
Board of Studies



SRI RAMAKRISHNA ENGINEERING COLLEGE, COIMBATORE – 22

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MINUTES OF THE 16th BOARD OF STUDIES MEETING FOR THE UG BE AERONAUTICAL PROGRAMME HELD ON 14.11.2023 AT 3.00 PM- IN ONLINE PLATFORM

The following members attended the above meeting.

Meeting Link : 16th Board of Studies Meeting_AERO-SREC

Tuesday, November 14 · 3:00 – 4:00pm

Video call link: <https://meet.google.com/xkg-bybj-iqb>

1. **Dr. J. David Rathnaraj – Chairperson**
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr. M. Sreekumar - University Nominee**
Professor & Head,
Centre for AI, IoT and Robotics,
IITDM Kancheepuram,
Vandalur - Kelambakkam Road,
Chennai - 600 127
3. **Dr. J. Bruce Ralphin Rose - Subject Expert**
Associate Professor,
Department of Aeronautical Engineering,
Anna University Regional Campus,
Tirunelveli - 627 007
4. **Dr. Ranjith Mohan – Subject Expert from other University**
Assistant Professor,
Department of Aerospace Engineering,
IIT Madras.

5. **Dr. Balasundaram M (2010 – 2014) – Meritorious Alumnus**
Research Engineer,
Green Aero,
IIT Delhi.
6. **Dr. C. J. Thomas Renald–Member & Department BoS Coordinator**
Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.
7. **Mr. C. Dinesh–Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
8. **Dr. R. Rang Raj–Member**
Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
9. **Mr. R. Sivakumar – Member**
Assistant Professor (Sl.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
10. **Mr. Nagarajapandian – Member**
Assistant Professor (Sl.Gr),
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022
11. **Mrs. S. Rangeetha– Member**
Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
12. **Mr. Y.J.Ganesh– Member**
Assistant Professor (Sl.G),
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Mr. Mohamed Ibrahim Mohideen - Industry Expert has informed about his absence due to the last minute travel schedules.

Prof.J.David Rathnaraj, Chairperson, Board of Studies, chaired the meeting and Dr.C.J.Thomas Renald BoS coordinator- Aero Board welcomed all the members to the 16th BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were discussed and approved.

ITEM No.1

- It is resolved that Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2020- Recorded.

ITEM No.2

- It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2021 & onwards- Recorded.

ITEM No.3

- It is resolved that the following NPTEL courses are approved for transfer of credits through online courses as per clause 13, UG Revised regulations 2020 (V2.0) during Nov/Dec 2023.

S. No.	Roll No	Name of the Candidate	NPTEL Course Code	Course Name	Credits Earned
1	2008004	David Livingston M	noc22-me134	Product design and development (4 weeks)	1
			noc23-de06	Design, Technology and Innovation(8 weeks)	2
2	2008001	Akash S	noc23-me13	Computer integrated manufacturing	3
3	2008009	Karthick A	noc23-me13	Computer integrated manufacturing	3

- The following students have completed a 5 days workshop at NIT Puducherry, Karaikal. The chairperson requested the board members to consider this workshop for one credit under employment enhancement course-Internship criteria.

S.No.	Year	Roll.No.	Name	Event Details
1	IV	2008012	Manoj P R	5 days Workshop on “ANSYS Multiphysics Event” at NIT, Puducherry, Karaikal during June12 – 16,2023
2	III	2108016	Merlin Silvia M	

Action taken: The university nominee and the board members after considering the hours for workshop approved the same for one credit under employment enhancement course- Internship criteria.

- It is resolved that the Result Analysis for the Academic Year 2022 – 2023 (Semesters VIII / VI/ IV/II) are approved and passed.

Semester : 8							
S.No	Course Code	Course Title	Number of Candidates				% of
			Regd	Appd	Pass	Fail	Pass
1	16AE266	PROJECT WORK	39	39	39	0	100
2	NOC22-ME74	RAPID MANUFACTURING	1	1	1	0	100
3	16AE2E22	AIRFRAME MAINTENANCE AND REPAIR	28	28	26	2	92.86
4	16AE2E20	AIR TRAFFIC CONTROL AND AERODROME DESIGN	25	25	25	0	100
	No. of Students Registered in all the Subjects		39				
	No. of Students Appeared in all the Subjects		39				
	No. of Students Passed in all the Subjects		37				
	Over All Pass Percentage		94.87				

Semester : 6							
S.No	Course Code	Course Title	Number of Candidates				% of
			Regd	Appd	Pass	Fail	Pass
1	20AE214	VIBRATION AND STRUCTURAL HEALTH MONITORING	29	29	25	4	86.21
2	20AE215	AIRCRAFT MAINTENANCE ENGINEERING	29	29	29	0	100
3	20AE216	AIRCRAFT STABILITY AND CONTROL	29	29	23	6	79.31

4	20AE217	ANALYSIS AND DESIGN OF COMPOSITE STRUCTURES	29	29	26	3	89.66
5	20AE280	FLIGHT TRAINING LABORATORY	29	29	29	0	100
6	20AE281	AIRCRAFT DESIGN PROJECT	29	29	29	0	100
7	20AE279	MINI PROJECT - II	29	29	29	0	100
8	20AE254	COMPUTATIONAL FLUID DYNAMICS	29	29	23	6	79.31
9	20AE255	AUTONOMOUS AERIAL ROBOTIC SYSTEMS	29	29	28	1	96.55
10	20AE2E04	EXPERIMENTAL STRESS ANALYSIS	29	29	23	6	79.31
11	20AE1003	CESSNA 152 AIRCRAFT AND R11F2S300 ENGINE	29	29	29	0	100
	No. of Students Registered in all the Subjects			29			
	No. of Students Appeared in all the Subjects			29			
	No. of Students Passed in all the Subjects			16			
	Over All Pass Percentage			55.2			

Semester : 4							
S.No	Course Code	Course Title	Number of Candidates				% of Pass
			Regd	Appd	Pass	Fail	
1	20AE208	LOW SPEED AERODYNAMICS	29	29	20	9	69
2	20AE209	AIR BREATHING PROPULSION	29	29	26	3	89.7
3	20AE210	AIRCRAFT STRUCTURAL MECHANICS	29	29	22	7	75.9
4	20AE211	AIRCRAFT PERFORMANCE	29	29	19	10	65.5
5	20AE275	MINI PROJECT - I	29	29	29	0	100
6	20AE276	LOW SPEED AERODYNAMICS LABORATORY	29	29	29	0	100
7	20AE277	AIRCRAFT STRUCTURES LABORATORY	29	29	29	0	100
8	20CS292	DATA STRUCTURES AND ALGORITHM ANALYSIS LABORATORY	29	29	29	0	100
9	20CS243	DATA STRUCTURES AND ALGORITHM ANALYSIS	29	29	29	0	100
10	20CS2E64	MACHINE LEARNING	9	9	9	0	100
11	20MA217	TRANSFORMS, PROBABILITY AND STATISTICS	29	29	21	8	72.4
12	20AE2E10	HIGH TEMPERATURE MATERIALS	10	10	10	0	100
13	20AE101	DESIGN THINKING	28	28	28	0	100
14	20EE2E54	ELECTRIC AND HYBRID VEHICLES	1	1	1	0	100
15	20PH2E03	SOLAR TECHNOLOGY		5	3	2	60
			5				
16	20CS2E65	CYBER SECURITY	3	3	3	0	100
17	20AE273	MECHANICAL SCIENCES LABORATORY	1	1	1	0	100
18	20EE2E53	TROUBLESHOOTING OF ELECTRICAL APPARATUS	3	3	3	0	100
19	20RA2E54	ROBOTIC SYSTEM ENGINEERING	6	6	6	0	100

20	20CH2E54	ENVIRONMENTAL SCIENCE AND SUSTAINABILITY	1	1	1	0	100
21	20IT2E61	ANDROID APPLICATION DEVELOPMENT	1	1	0	1	0
	No. of Students	Registered in all the Subjects		29			
	No. of Students	Appeared in all the Subjects		29			
	No of Students Passed in all the Subjects			14			
	Over All Pass Percentage			48.3			

- Dr.Sreekumar -University nominee enquired about the poor pass percentage in the 4th semester & 6th semester. The chairperson explained the reason for the same and the steps taken for improvement.
- Remedial classes for slow learners are practiced for the improvement of overall pass percentage.
- Dr.Ranjith Mohan – Expert member from Center Govt/Research lab/other University enquired about the courses titled Aircraft performance , Low Speed Aerodynamics being taught in the same semester. Chairperson explained the reason for the same and assured steps will be taken for rearrangement of the courses in the consecutive semesters.

Semester : 2							
			Number of Candidates				% of
S.No	Course Code	Course Title	Regd	Appd	Pass	Fall	Pass
1	20AE203	AVIATION MANAGEMENT	27	27	24	3	88.89
2	20AE271	COMPUTING LABORATORY	27	27	26	1	96.3
3	20AE272	ENGINEERING DRAWING PRACTICES	28	28	27	1	96.43
4	20CS242	ARTIFICIAL INTELLIGENCE	27	27	24	3	88.89
5	20E1203	AEROSPACE SENSORS AND INSTRUMENTATION	28	28	27	1	96.43
6	20E1272	AEROSPACE SENSORS AND INSTRUMENTATION LABORATORY	28	28	27	1	96.43
7	20PH213	AIRCRAFT MATERIALS AND PROCESSES	28	28	26	2	92.86
8	20CE205	ENGINEERING MECHANICS	28	28	21	7	75
9	20HS202	TECHNICAL WRITING	22	22	22	0	100
10	20MA205	CALCULUS AND NUMERICAL METHODS	28	28	22	6	78.57
11	20AE201	INDIAN SPACE MISSIONS	27	27	27	0	100
12	20HS203	BASIC GERMAN	6	6	6	0	100

No. of Students Registered in all the Subjects	28			
No. of Students Appeared in all the Subjects	27			
Over All Pass Percentage	70.4			

- It is resolved that the following 15 candidates who have registered for additional credits during Nov/Dec 2023 examination under the Specialization/Minor courses category Verticals shall be approved according to the communication from Anna University, Chennai via Letter No. 5749/AU/CAC/Honours/2022 dated 16.11.2022.

Specialization /Minor Course Details	Course Code and Title	Register No. of the Candidate	Name	CGPA
Drone Technology	20AE2E23- Fixed Wing UAS-101 20AE2E24- Rotory Wing UAS -101	71812108004	C.Balanaveen	7.10
		71812108026	Vishnu Hari. D	8.59
		71812108002	Arunathiraja S	7.62
		71812108013	Kaushik.S	8.38
		71812108001	Arjun.Mp	8.45
		71812108031	Kishore Narayana S	0
		71812108006	Girithees S	0
		71812108021	Swetha K	7.87
		71812108010	Haritha A	9.09
		71812108016	Merlin Silvia. M	8.73
		71812108018	Samuraja A	0
		71812108022	V.Thenmozhi	8.45
		71812108003	Balambika S	9.15
		71812108032	Prince Singh M	0
		71812108007	Hari Hara Sudhan	0

- It is resolved that the new courses and its syllabi be approved for the Honors Specialization / minor in B.E. Aeronautical degree programme offered by Garuda Aerospace , Chennai.

<u>Drone Technology (Specialization/Minor)</u>										
S.No	Course Code	Course Title	L	T	P	C	POs	CA	ES	Total
1	20AE2E26	Applications of UAS	3	0	0	3	1,2,3,4,5,6,8	40	60	100
2.	20AE2E27	UAS: Safety, Rules and Ethics	3	0	0	3	1,5,6,7,8	40	60	100

Suggestions/Comments from External Expert Members and University Nominee to be recorded

The contents for the above syllabus were circulated to the Board members well in advance and the following feedbacks were discussed.

Dr. Sreekumar

- The Reference and text books to be updated with latest editions for both courses.

Action taken: The latest edition text books and reference books are updated

- Suggested to change the word Rules to codes in the title if applicable in the course UAS: Safety, Rules and Ethics (20AE2E27)
- The LTPC to be cross verified to accommodate the practical hours for the course Applications of UAS(20AE2E26)

Action taken: The LTPC of 3 0 0 3 was fixed as the course outcome was changed with action verb as practicals cannot be accommodated in the content.

Dr. Ranjith Mohan

- The Course outcome suggest for practical hours for the course Applications of UAS(20AE2E26)
- Preflight weather assessment – is it practical or simulated for the course Applications of UAS(20AE2E26)

Action Taken: The course outcome was changed with action verb as practicals cannot be accommodated in the content.

- Syllabus is oriented towards mostly agricultural applications.

Action Taken: Drones manufactured by Garuda Aerospace are for agricultural applications, hence there is orientation towards agriculture in the course content was explained by the chairperson.

Dr. Bruce Ralphin Rose

- Topics based on classification of drones are missing.
- Nano, Mini, Micro etc drones and related applications may be worked out.

Action Taken: The classification of drones is mentioned in the introduction courses.

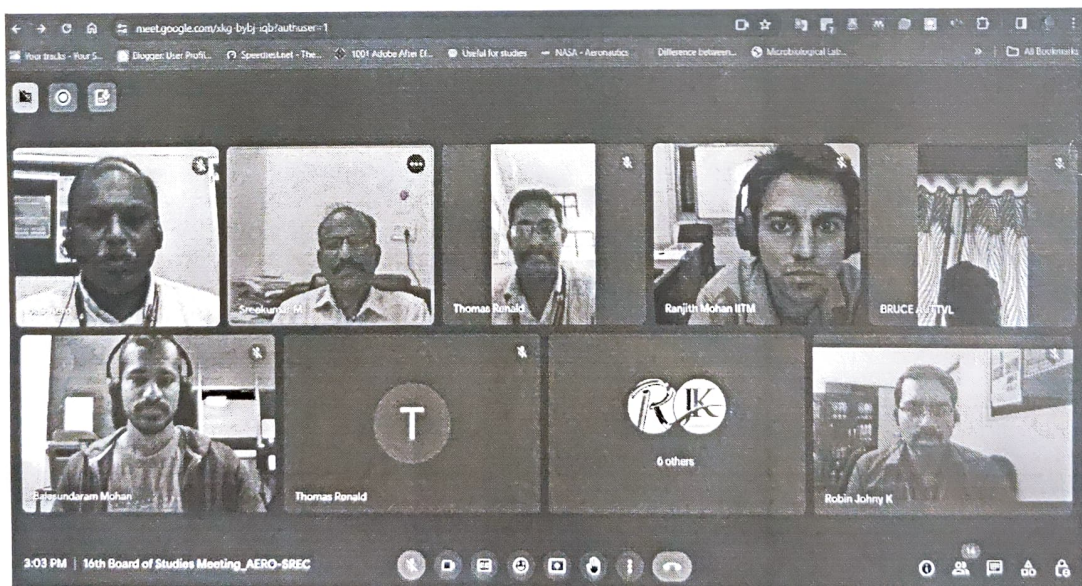
Dr. Balasundaram

- Defence applications may be included in the syllabus.

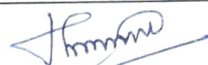
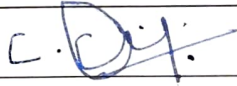
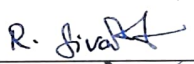
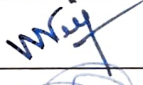
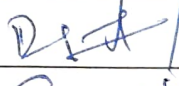
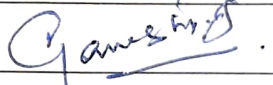
Action Taken: Will be considered for other courses to be developed though it is mentioned here.

Based on the above discussions the course syllabus content was passed in the BoS meeting.

Dr. R. Rangaraj, Assistant Professor (Sl.G)/Aero proposed the vote of thanks.



Declaration: I have read and understood the minutes of 16th BoS meeting – Aero Board and give my consent for the same.

S.No	Name of the Member	Designation	Signature
1	Dr. J. David Rathnaraj	Chairperson	
2	Dr. M. Sreekumar	University Nominee	Acknowledgement obtained thro' mail.
3	Dr. Bruce Ralphin Rose	Subject Expert	Acknowledgement obtained thro' mail.
4	Mr. Mohamed Ibrahim Mohideen	Industry Expert	Acknowledgement obtained thro' mail.
5	Dr. Ranjith Mohan	Subject Expert from Other University	Acknowledgement obtained thro' mail.
6	Dr. Balasundaram M	Meritorius Alumnus	Acknowledgement obtained thro' mail.
7	Dr. C. J. Thomas Renald	Member & BoS Coordinator	
8	Mr. C. Dinesh	Internal Member	
9	Mr. R. Sivakumar	Internal Member	
10	Dr. R. Ranga Raj	Internal Member	
11	Mr. K. Robin Johny	Internal Member	
12	Mr. Nagarajapandian	Internal Member/EIE	
13	Mrs. S. Rangeetha	Internal Member/ECE	
14	Mr. Y.J.Ganesh	Internal Member/Maths	


CHAIRPERSON
BOARD OF STUDIES
Department of Aeronautical Engineering
Chairman
Board of Studies

**SREC**

Thomas Renald <thomasrenald.joseph@srec.ac.in>

16th BoS Aero Board minutes- Reg

Sreekumar M <msh@iiitdm.ac.in>

Thu, Nov 23, 2023 at 11:05 AM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Cc: bruce@auttl.ac.in, Bruce Rose <bruceralphin@gmail.com>, Ranjith Mohan <ranjith.m@iitm.ac.in>, Balasundaram M <balaspeakin@gmail.com>, Mohammed.Ibrahim@honeywell.com

Fine, pl go ahead sir

Dr. M. Sreekumar, PhD (IIT Madras)

[Professor and Head-Centre for AI, IoT, and Robotics](#)

Faculty of Mechanical Engineering

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram

(An Institute of National Importance, Ministry of Education, Government of India)

[Vandalur-Kelambakkam Road, Chennai-600 127, India](#)Inst. Web: <https://www.iiitdm.ac.in/people/faculty/msh@iiitdm.ac.in>Vidwan: <https://vidwan.inflibnet.ac.in/profile/94017>

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Thomas Renald <thomasrenald.joseph@srec.ac.in>

16th BoS Aero Board minutes- Reg

Ranjith Mohan <ranjith.m@iitm.ac.in>

Thu, Nov 23, 2023 at 10:28 AM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Thank you sir. Had a quick read, appears to have captured all points in the discussion. Please correct an instance of my incorrect name being typed.. Ranjith Mohan (not Kumar)

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>**Sent:** Thursday, November 23, 2023 10:32 AM**To:** Sreekumar M; bruce@autvtl.ac.in; Bruce Rose; Ranjith Mohan; Balasundaram M;
Mohammed.Ibrahim@honeywell.com**Subject:** 16th BoS Aero Board minutes- Reg

[Quoted text hidden]

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SREC

Thomas Renald <thomasrenald.joseph@srec.ac.in>

16th BoS Aero Board minutes- Reg

BRUCE AUTTVL <bruce@auttv.ac.in>

Fri, Nov 24, 2023 at 10:36 AM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Yes..The contents are reviewed and it is prepared well.

Pls proceed.

Thanks

On Thu, Nov 23, 2023 at 10:32 AM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

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**SREC**

Thomas Renald <thomasrenald.joseph@srec.ac.in>

16th BoS Aero Board minutes- Reg

Mohideen, Mohammed Ibrahim (IFS COE) <Mohammed.Ibrahim@honeywell.com>

Mon, Dec 4, 2023 at 6:33 PM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>, Sreekumar M <msh@iitdm.ac.in>, "bruce@auttl.ac.in" <bruce@auttl.ac.in>, Bruce Rose <bruceralphin@gmail.com>, Ranjith Mohan <ranjith.m@iitm.ac.in>, Balasundaram M <balaspeakin@gmail.com>

I am good with BoS minutes and resolutions. Thanks.

Regards

Ibrahim

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sent: 23 November 2023 10:33

To: Sreekumar M <msh@iitdm.ac.in>; bruce@auttl.ac.in; Bruce Rose <bruceralphin@gmail.com>; Ranjith Mohan <ranjith.m@iitm.ac.in>; Balasundaram M <balaspeakin@gmail.com>; Mohideen, Mohammed Ibrahim (IFS COE) <Mohammed.Ibrahim@honeywell.com>

Subject: [External] 16th BoS Aero Board minutes- Reg

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[Quoted text hidden]



Thomas Renald <thomasrenald.joseph@srec.ac.in>

16th BoS Aero Board minutes- Reg

Balasundaram M <balaspeakin@gmail.com>

Fri, Nov 24, 2023 at 6:39 PM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Dear Prof. Thomas Renald,

Apologies for the late reply. I give my consent, please proceed further.

With best regards
Balasundaram

On Thu, Nov 23, 2023 at 10:32 AM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

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SRI RAMAKRISHNA ENGINEERING COLLEGE

[Educational Service: SNR Sons Charitable Trust]
[Autonomous Institution, Reaccredited by NAAC with 'A+' Grade]
[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]
[ISO 9001:2015 Certified and All Eligible programmes Accredited by NBA]
Vattamalaipalayam, N.G.G.O. Colony Post,
COIMBATORE - 641 022

Minutes of the 15th Board of Studies meeting for the UG programme BE Aeronautical Engineering held on 2nd May 2023 at 2.30 PM in Board Room, SREC

The following members attended the above meeting:

1. **Dr. J. David Rathnaraj** – *Chairperson*
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr. M. Sreekumar** - *University Nominee*
Professor & Head,
Centre for AI, IoT and Robotics,
IITDM Kancheepuram,
Vandalur - Kelambakkam Road,
Chennai - 600 127
3. **Dr. J. Bruce Ralphin Rose** - *Subject Expert*
Associate Professor,
Department of Aeronautical Engineering,
Anna University Regional Campus,
Tirunelveli - 627 007
4. **Mr. Mohamed Ibrahim Mohideen** - *Industry Expert*
Principal System Engineer,
Honeywell Technologies,
Bengaluru - 560 103
5. **Dr. C. J. Thomas Renald** – *Member & Department BoS Coordinator*
Associate Professor,
Department of Aeronautical Engineering,

Sri Ramakrishna Engineering College,
Coimbatore- 641 022.

6. **Mr. C. Dinesh**–*Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
7. **Mr. R. Rang Raj**–*Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
8. **Mr. R. Sivakumar** – *Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
9. **Mr. Nagarajapandian** – *Member*
Assistant Professor (Sr.Gr),
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
10. **Mrs. S. Rangeetha**– *Member*
Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
11. **Mr. Y.J.Ganesh**– *Member*
Assistant Professor,
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Dr. Ranjith Mohan- Subject Expert form Other University and **Mr.Balasundaram M** – Meritorious Alumnus has priorly informed about their absence.

Prof. J. David Rathnaraj, Chairperson, Board of Studies, chaired the meeting and welcomed all the members to the 15th -BoS meeting. After a brief introduction, the agerda items listed were taken up for discussion and the following resolutions were passed.

UG Programmes:

R2020

1. It is resolved that Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2020.
2. It is resolved that (Revised) Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2021 & onwards.
3. It is resolved that the syllabi for the following new Professional Elective courses under (Revised) Regulations 2020 be approved and passed.

S. No.	Course Code	Course Title	L	T	P	C
1.	20AE2E13	Boundary Layer Theory	3	0	0	3
2.	20AE2E14	Design of Jet Engine Components	3	0	0	3
3.	20AE2E15	Non-Destructive Testing for Aircraft	3	0	0	3
4.	20AE2E16	Aircraft Rules and Regulations	3	0	0	3
5.	20AE2E17	Aviation Law	3	0	0	3
6.	20AE2E18	Ethics and Aviation	3	0	0	3
7.	20AE2E19	Aviation Safety	3	0	0	3
8.	20AE2E20	Digitalisation in Aeronautics and Space	3	0	0	3
9.	20AE2E21	Space Mechanics	3	0	0	3
10.	20AE2E22	Aerospace Guidance & Control	3	0	0	3

4. It is resolved that the following new one credit courses will be included under (Revised) Regulations 2020 for B.E. Aeronautical programme.

S. No.	Course Code	Course Title	Offered by
ONE CREDIT COURSES (OCC)			
1.		Design of Propellers	The ePlane Company, Chennai

5. It is resolved that the following NPTEL courses are approved for credit transfer during April/May 2023.

S.No	NPTEL Course Code	NPTEL Course Title	Credits	Course Duration
1	noc23-ae01	Aircraft Design	3	12
2	noc23-ae05	Lighter than Air Systems	3	12
3	noc23-ae06	Fundamentals of Theoretical and Experimental Aerodynamics	3	12
4	noc23-cs05	An Introduction to Artificial Intelligence	3	12
5	noc23-de01	Fundamentals of Automotive Systems	3	12
6	noc23-de05	Innovation by Design	1	4
7	noc23-de06	Design, Technology and Innovation	2	8
8	noc23-mm03	Material Characterization	3	12
9	noc23-me13	Computer Integrated Manufacturing	3	12

6. It is resolved that the Result Analysis for the Academic Year 2022 – 2023 (Semesters VII / V/ III) are approved and passed.

Semester –III

S.No	Course Code	Course Title	Pass %
1	20AE204	Fluid Mechanics and Machinery	85.71
2	20AE205	Thermodynamics	86.21
3	20AE251	Machining Science and Technology	100
4	20AE273	Mechanical Sciences laboratory	100
5	20AE274	Computer Aided Design Practices	96.55
6	20AE206	Mechanics of Materials	93.1
7	20CS241	Programming Foundations	100
8	20CS291	Programming Foundations Laboratory	100
9	20CS2E61	Python for data science	92.86
10	20MA210	Partial Differential Equations and Tensor Calculus	86.21
11	20AE207	Aircraft Systems	100

V Semester

S.No	Course Code	Course Title	Pass %
1	20AE212	High Speed Aerodynamics	86.21
2	20AE213	Space Propulsion	86.21
3	20AE252	Avionics	92.59
4	20AE253	Finite Element Analysis	89.66
5	20AE278	Propulsion Measurement Practices	93.1
6	20AE2E07	Heat Transfer	85.71
7	20EI218	Control systems in Aeronautics	89.68
8	20HS207	Universal Human Values	100
9	20IT241	Programming in Python	89.66
10	20IT291	Programming in Python Laboratory	93.1
11	20EC2E53	Image Processing and applications	100
12	20AE101	Design Thinking	100

VII Semester

S.No	Course Code	Course Title	Pass %
1	16AE220	Heat Transfer	87.18
2	16AE222	UAV Systems Design	87.18
3	16AE223	Aerospace Guidance and Control	89.74
4	16AE264	Aircraft Design Project	100
5	16AE265	UAV Laboratory	100
6	16AE2E05	Industrial Aerodynamics	97.44
7	16AE2E15	Experimental Stress Analysis	91.89
8	16AE2E18	Airport Management	100
9	NOC22- ME10S14470094	Computer Integrated Manufacturing	100
10	NOC22- ME65S44502484	IC Engines and Gas Turbines	100
11	16AEI005	Cessna 152 and R11F2S300	100
12	NOC21- AE12S13362367	Introduction to Aircraft Design	100

7. It is resolved that the following Honors Specialization / minor be approved in B.E. Aeronautical programme – Drone Technology

8. It is resolved that the new courses and its syllabi be approved for the Honors Specialization / minor in degree programme

S. No.	Course Code	Course Title	L	T	P	C
Drone Technology						
1.	20AE2E23	Fixed Wing UAS 101	3	0	0	3
		(or)				

2.	20AE2E24	Rotary wing UAS-101	3	0	0	3
3.	20AE2E25	UAS Aerodynamics	3	0	0	3

9. As per Clause 12 of the Regulations 2020, the student is allowed to undergo a maximum of 6 weeks industrial training for internship. It is mandatory to earn 2 credits.

Duration of Training	Credits
2/3 Weeks	1
6 Weeks	2

- It is resolved that One Credit Industry oriented courses to be included for the completion of 2 credits to be earned under Clause 12 of (Revised) Regulation 2020 for Industrial Training / Internship under the Employability Enhancement Category.
- It is resolved that the course **“Level 4 training in Mechanical Electrical Electronics Instrumentation at Bharathamatha – Coimbatore’s RPL Premise for a duration of 436 hours with a NCVET Certification”** be considered equivalent to the required industrial training as per Clause 12, and the student is allowed to earn 2 credits.
- It is resolved that the course **“Summer Research Fellowship under the title “Mixing of two liquids with different surface tension” at IIT Madras, through the Indian Academy of Sciences’ for a duration of two months (July to September 2022) under the supervision on Prof. A. P. Baburaj, IIT Madras”** be considered equivalent to the required industrial training as per Clause 12, and the student is allowed to earn 2 credits

10. It is resolved that the following Tamil Courses and its syllabi as recommended by Anna University, Chennai be approved to be included as the Mandatory courses.

1. Heritage of Tamils
2. Tamils and Technology

Suggestion by expert members.

Dr. M. Sreekumar- University Nominee

- Include DGCA norms in the syllabus content
- Latest edition of text books and references to be included
- More reference books to be included
- eBooks and Web reference to be included
- M.Tech Drone technology, IIT Kanpur to be referred
- Aircraft Manufacturing to be focused

Dr. J. Bruce Ralphin Rose- Subject Expert

- Environmental aviation Law – Climate Neutral Aviation topics to be added
- Green Aviation to be added in recent developments
- Theory of plates & shells, Theory of elasticity to be added
- Urban Air Mobility book from CRC Press to be included
- VTOL, Vertipods to be focused
- UA Systems syllabus with five topics
 - UAV parts and function
 - UAV Subsystem function
 - Avionic Components of UAV
 - Design Concepts and processes
 - Fabrication process of UAV systems
- Robotic perception titles to be included
- Under water UAVs to be explored.
- NPTEL courses on maintenance to be focussed

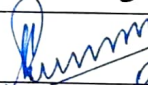
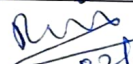
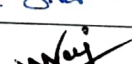
Mr. M. Balasundaram- Meritorious Alumnus

Mr. Mohamed Ibrahim Mohideen - Industry Expert

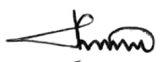
- Drone rules for piloting to be included
- Ethics & Aviation to be incorporated
- Boring 737 Max to be included as case study
- Aviation Safety - Categorization of Hazards - Catastrophic hazard/Safety to be added

Dr.C.J.Thomas Renald , Associate Professor/Aero proposed the vote of thanks.

Declaration: I have read and understood the minutes of ^{15th}14th BoS meeting – Aero Board and give my consent for the same.

S.No	Name of the Member	Designation	Signature
1	Dr. J. David Rathnaraj	Chairperson	
2	Dr. M. Sreekumar	University Nominee	
3	Dr. Bruce Ralphin Rose	Subject Expert	 02/05/23
4	Mr. Mohamed Ibrahim Mohideen	Industry Expert	 02/05/2023
5	Dr. Ranjith Mohan	Subject Expert from Other University	Acknowledgement obtained through mail
6	Mr. Balasundaram M	Meritorius Alumnus	Acknowledgement obtained through mail
7	Dr. C. J. Thomas Renald	Member & BoS Coordinator	
8	Mr. C. Dinesh	Internal Member	
9	Mr. R. Sivakumar	Internal Member	
10	Mr. R. Ranga Raj	Internal Member	
11	Mr. K. Robin Johny	Internal Member	

12	Mr. Nagarajapandian	Internal Member/EIE	M. Nagarajapandian
13	Mrs. S. Rangeetha	Internal Member/ECE	S. Rangeetha
14	Mr. Y.J.Ganesh	Internal Member/Maths	Y.J. Ganesh


Chairperson
 Board of Studies
 Department of Aeronautical Engineering (U.G)

Chairman
Board of Studies



SRI RAMAKRISHNA ENGINEERING COLLEGE

[Educational Service: SNR Sons Charitable Trust]
[Autonomous Institution, Reaccredited by NAAC with 'A+' Grade]
[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]
[ISO 9001:2015 Certified and All Eligible programmes Accredited by NBA]
Vattamalaipalayam, N.G.G.O. Colony Post,
COIMBATORE - 641 022

Minutes of the 14th Board of Studies meeting for the UG programme BE Aeronautical Engineering held on 3rd December 2022 at 3.00 PM through Webex online platform.

The following members attended the above meeting:

Meeting link

<https://snrsrec.webex.com/snrsrec/j.php?MTID=m5e292f2d8ceb24a817fa480c1013ca77>

Meeting number (access code): 2641 915 6927

Meeting password: nsPCQdfM285

1. **Dr. J. David Rathnaraj – Chairperson**
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr. M. Sreekumar - University Nominee**
Associate Professor,
Department of Mechanical Engineering,
IITDM Kancheepuram,
Vandalur - Kelambakkam Road,
Chennai - 600 127
3. **Dr. J. Bruce Ralphin Rose - Subject Expert**
Associate Professor,
Department of Aeronautical Engineering,
Anna University Regional Campus,
Tirunelveli - 627 007

-
4. **Dr. Ranjith Mohan – Subject Expert from other University**
Assistant Professor,
Department of Aerospace Engineering,
IIT Madras.
 5. **Mr. Mohamed Ibrahim Mohideen - Industry Expert**
Principal System Engineer,
Honeywell Technologies,
Bengaluru - 560 103
 6. **Mr. Balasundaram M (2010 – 2014) – Meritorious Alumnus**
PhD Scholar,
Dept. of Aerospace Engineering,
IIT Kanpur
 7. **Dr. C. J. Thomas Renald –Member & Department BoS Coordinator**
Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.
 8. **Mr. C. Dinesh –Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
 9. **Mr. R. Rang Raj –Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
 10. **Mr. R. Sivakumar – Member**
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
 11. **Mr. Nagarajapandian – Member**
Assistant Professor (Sr.Gr),
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022

12. Mrs. S. Rangeetha– Member

Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

13. Mr. N. Vigneshwar– Member

Assistant Professor,
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Prof. J. David Rathnaraj, Chairperson, Board of Studies, chaired the meeting and welcomed all the members to the 14th -BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed.

UG Programmes:

R2020

1. It is resolved that Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2020.
2. It is resolved that Revised Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2021 & onwards.
3. It is resolved that the following NPTEL courses are approved for credit transfer during December 2022.

S.No.	Course Code	Course Title	Duration	Course Start Date
1	noc22-ae14	Introduction to Aircraft Design	12 Weeks	Jul 25, 2022
2	noc22-ae21	Space Flight Mechanics	12 Weeks	Jul 25, 2022
3	noc22-ge29	Fundamentals Of Artificial Intelligence	12 Weeks	Jul 25, 2022
4	noc22-me122	Fundamentals of Additive Manufacturing Technologies	12 Weeks	Jul 25, 2022
5	noc22-me123	Automation in Manufacturing	12 Weeks	Jul 25, 2022

6	noc22-me74	Rapid Manufacturing	12 Weeks	Jul 25, 2022
7	noc22-mm37	Techniques of Materials Characterization	12 Weeks	Jul 25, 2022
8	noc22-mm42	Fracture, Fatigue and Failure of Materials	12 Weeks	Jul 25, 2022
9	noc22-ge24	Introduction to Biomimicry	8 Weeks	Jul 25, 2022
10	noc22-me134	Product Design and Development	4 Weeks	Jul 25, 2022

4. It is resolved that the Result Analysis for the Academic Year 2021 – 2022 are approved and passed.

Results of IV year – 8 Sem B.E. – AERO

May 2022			Results AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
Theory						
1	16AE266	PROJECT WORK	51	51	0	100
2	16AE2E18	AIRPORT MANAGEMENT	44	44	0	100
3	16AE2E20	AIR TRAFFIC CONTROL AND AERODROME DESIGN	44	44	0	100
4	16AEI003	UAV PILOTING	1	1	0	100
5	16AEI001	NON DESTRUCTIVE TESTING	1	1	0	100
6	16EII008	BUILDING MANGEMENT SYSTEM	1	1	0	100
Over all Pass Percentage			50 / 50 = 100 %			

Results of III year – 6 Sem B.E. – AERO

May 2022			Result AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
1	16AE218	COMPUTATIONAL FLUID DYNAMICS	39	34	5	87.18
2	16AE219	AVIONICS	39	37	2	94.87
3	16AE215	FLIGHT DYNAMICS	39	32	7	82.05
4	16AE221	VIBRATION AND AERO ELASTICITY	39	26	13	66.67
5	16AE261	AVIONICS LABORATORY	39	39	0	100
6	16AE262	COMPUTATIONAL FLUID DYNAMICS LAB	39	39	0	100
7	16AE263	MINI PROJECT II	39	39	0	100
8	16PT201	GENERAL APTITUDE	39	35	4	89.74
9	16BM2E31	HEALTHCARE TECHNOLOGY	12	10	2	83.33
10	16AE2E06	AIRCRAFT SYSTEMS	22	20	2	90.91
11	16AE2E23	HELICOPTER MAINTENANCE	9	9	0	100
12	16CS2E51	DATA ANALYTICS	1	1	0	100
13	16AE2E17	ROCKET AND MISSILES	20	17	3	85

May 2022			Result AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
14	16AE2E21	AERO ENGINE MAINTENANCE AND REPAIR	1	1	0	100
15	16EI2R28	PROGRAMMABLE LOGIC CONTROLLER	2	2	0	100
16	16PH2E04	SOLAR TECHNOLOGY	2	2	0	100
17	16CH2E01	ENERGY STORING DEVICES AND FUEL CELLS	5	5	0	100
18	16EN2E01	EFFECTIVE TECHNICAL COMMUNICATION	4	4	0	100
19	16EE2E30	RENEWABLE ENERGY SYSTEM	4	3	1	75
20	16CS2E52	JAVA PROGRAMMING	3	1	1	66.67
21	16EC2E47	FUNDAMENTALS OF MOBILE COMMUNICATION	1	1	0	100
22	16PH2E03	NON CONVENTIONAL ENERGY RESOURCES	2	2	0	100
23	16RA2E52	ROBOTIC SYSTEM ENGINEERING	2	2	0	100
24	16MA2E05	STTISTICS AND LINEAR PROGRAMMING	1	1	0	100
25	16EC2E08	RADAR COMMUNICATION	1	1	0	100
Over all Pass Percentage			23 / 39 = 58.97 %			

Results of II year – 4 Sem B.E. – AERO

May 2022			Results AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
1	20AE208	LOW SPEED AERODYNAMICS	39	34	5	87.18
2	20AE209	AIR BREATHING PROPULSION	39	37	2	94.87
3	20AE210	AIRCRAFT STRUCTURAL MECHANICS	39	32	7	82.05
4	20AE211	AIRCRAFT PERFORMANCE	39	26	13	66.67
5	20AE276	LOW SPEED AERODYNAMICS LAB	39	39	0	100
6	20AE277	AIRCRAFT STRUCTURES LAB	39	39	0	100
7	20MA217	TRANSFORMS, PROBABILITY AND STATISTICS	39	39	0	100
8	20CS243	DATA STRUCTURES AND ALGORITHM ANALYSIS	39	35	4	89.74
9	20CS292	DATA STRUCTURES AND ALGORITHM ANALYSIS LAB	12	10	2	83.33
10	20AE275	MINI PROJECT I	22	20	2	90.91
11	20CS2E63	JAVA PROGRAMMING	9	9	0	100
12	20CS2E65	CYBERSECURITY	1	1	0	100
13	20EI2E13	AUTOMATION AND MACHINE VISION SYSTEMS	20	17	3	85

May 2022			Results AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
14	20ME2E01	INTELLECTUAL PROPERTY RIGHTS FOR ENGINEERS	1	1	0	100
15	20IT2E51	ANDROID APPLICATION DEVELOPMENT	2	2	0	100
16	20EC2E54	INTERNET OF THINGS	2	2	0	100
17	20EE2E54	ELECTRIC AND HYBRID VEHICLES	5	5	0	100
Over all Pass Percentage			10/29 = 34.48%			

Results of I year – 2 Sem B.E. – AERO

July 2022			Results AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
1	20AE203	AVIATION MANAGEMENT	26	25	1	96.15
2	20MA205	CALCULUS AND NUMERICAL METHODS	26	23	3	88.46
3	20CS242	ARTIFICIAL INTELLIGENCE	26	25	1	96.15
4	20CE205	ENGINEERING MECHANICS	26	14	12	53.85
5	20EI203	AEROSPACE SENSORS AND INSTRUMENTATION	26	26	0	100
6	20AE271	COMPUTING LABORATORY	26	26	0	100
7	20EI272	AEROSPACE SENSORS AND INSTRUMENTATION LABORATORY	26	26	0	100
8	20AE272	ENGINEERING DRAWING PRACTICES	26	25	1	96.15
9	20PH213	AIRCRAFT MATERIALS AND PROCESSES	26	26	0	100
10	20HS202	TECHNICAL WRITING	18	18	0	100

May 2022			Results AERO			
Sl. No	Subject Code	Subject Title	No. of students			Pass %
			Appeared	Passed	Failed	
11	20AE203	INDIAN SPACE MISSIONS	28	28	0	100
12	20BM206	BIOLOGY FOR ENGINEERS	28	28	0	100
13	20HS203	BASIC GERMAN	5	5	0	100
14	20HS204	BASIC JAPANESE	4	3	1	75
Over all Pass Percentage			14/26 = 53.85			

5. It is resolved that the Degree awarded details for the Academic Year 2021 – 2022 are approved and passed.

BE: Aeronautical Engineering

Type of Study: F.T.

S.No	Total number of students	Total number of students awarded degree BE Aeronautical Engineering	Percentage of Graduation 2021-2022
1	51	50	98.04
	First class with Distinction	1	
	First class	40	
	Second class	9	

6. It is resolved that the Revised Uniform Evaluation Method of Students based on Relative Grading, as per the communications received from Anna University, Chennai be approved and passed.
7. It was resolved to offer BE/BTech Honours with Specialization in Drone Technology under BE Aeronautical Engineering from 2022-2023 onwards for the 2021 admitted students as per Anna University guidelines
- It is resolved that Award of UG (Hons) with Specialization, UG with Minor and UG (Hons) be implemented as approved by the Academic Council of Anna University, Chennai for the UG students who have joined from the Academic Year 2021 – 2022 for all B.E./B.Tech. programmes for students admitted in the Academic year 2021 & onwards.
1. B.E. / B.Tech. (Honours) in the same discipline
 2. B.E. / B.Tech. (Minor) in other specialization and
 3. B.E. / B.Tech. (Honours)

8. Norms for B.E. / B.Tech. (Hons) specialization in the same discipline, B.E. / B.Tech. (Hons) and B.E. / B.Tech. (Minor) in other specialization

i) B.E. / B.Tech. (Hons) specialization in the same discipline

- a) The student should have earned additionally a minimum of 20 credits from a vertical of the same programme
- b) Should have passed all the courses in the first attempt
- c) Should have earned a minimum CGPA of 7.50.

ii) B.E. / B.Tech. (Hons)

- a) The student should have earned additional courses (minimum of 20 credits) from more than one vertical of the same programme.
- b) Should have passed all the courses in the first attempt
- c) Should have earned a minimum CGPA of 7.50.

iii) B.E. / B.Tech. (Minor) in other specialization

- a) The student should have earned additionally a minimum of 20 credits in any one of the verticals of other B.E./B.Tech programmes.
 - Students can earn maximum of 6 credits in online mode (SWAYAM platform) out of these 20 credits as approved by Chairperson of Board of Studies / Academic Council.
 - B.E. / B.Tech. (Hons) specialization in the same discipline, B.E. / B.Tech. (Hons) and B.E. / B.Tech. (Minor) in other specialization degree will be optional for students.
 - Students will be permitted to register Specialization / Minor courses from 4th / 5th semester onwards. The eligibility criteria will be the (N-1)th semester performance.

CLASSIFICATION OF DEGREE for students who opted for Specialization / Minors

1. First Class with Distinction					
Degree	Duration of the Programme	Duration Permitted	Additional credits above the requirement of curriculum	CGPA	Pass in
B.E./B.Tech. Regular	4 years	5 years	-	8.50	First Attempt
B.E./B.Tech. Lateral Entry	3 years	4 years	-	8.50	First Attempt
B.E. / B.Tech. (Hons) specialization	3 / 4 years (Lateral Entry/	4/5 years (Lateral Entry/	20 credits from any one vertical of the same	8.50	First Attempt

in the same discipline	Regular respectively)	Regular respectively)	programme		
B.E. / B.Tech. (Hons)	3 / 4 years (Lateral Entry/ Regular respectively)	4/5 years (Lateral Entry/ Regular respectively)	20 credits from more than one verticals of the same programme	8.50	First Attempt
B.E. / B.Tech. (Minor) in other specialization	3 / 4 years (Lateral Entry/ Regular respectively)	4/5 years (Lateral Entry/ Regular respectively)	20 credits from any one vertical of the other programme	8.50	First Attempt
2. First Class					
B.E./B.Tech. Regular	4 years	5 years	-	6.50	-
B.E./B.Tech. Lateral Entry	3 years	4 years	-	6.50	-
B.E. / B.Tech. (Hons) specialization in the same discipline	3 / 4 years (Lateral Entry/ Regular respectively)	4/5 years (Lateral Entry/ Regular respectively)	20 credits from any one vertical of the same programme	7.50	First Attempt
B.E. / B.Tech. (Hons)	3 / 4 years (Lateral Entry/ Regular respectively)	4/5 years (Lateral Entry/ Regular respectively)	20 credits from more than one verticals of the same programme	7.50	First Attempt
B.E. / B.Tech. (Minor) in other specialization	3 / 4 years (Lateral Entry/ Regular respectively)	4/5 years (Lateral Entry/ Regular respectively)	20 credits from any one vertical of the other programme	6.50	-
3. Second Class					
B.E./B.Tech. Regular / lateral entry and B.E./B.Tech. minor in other specialization degree students (not covered in first class with distinction and first class classification of degree) who qualify for the award of degree shall be declared to have passes examination in second class.					
4. Others					
A student earned additional 20 credits but does not satisfy the conditions mentioned in first class with distinction and first class classification of degree shall not be awarded B.E. / B.Tech. Honours. In such cases the mark sheet will show the additional courses studied and those courses shall not be considered for CGPA computation. In such case, if the student becomes eligible for first class, while computing CGPA without taking into account the additional courses studied, the student shall be awarded B.E. / B.Tech. in First Class only.					

-
9. It is resolved that the curriculum and syllabi be approved for the Specialization / minor in BE Aeronautical degree programme –

- Requisites - Six Courses with 3 credits each
- One Laboratory Course
- One Mini Project
- Total 20 Credits

S.No	Course Code	Course Title	Credits	Mode of Delivery	Offered by
1	20XXXXX	Introduction to UAV	3	Class	SREC/Industry/NPTEL
2	20XXXXX	Aerodynamics of Drones	3	Class	SREC/Industry/NPTEL

10. Courses planned to be conducted by Industry Persons

Course Code	Course Title	L	T	P	C	POs	CA	ES	TOTAL
20AE215	Aircraft Maintenance Engineering	3	0	0	3	3, 5, 6	50	50	100

11. Suggestion by expert members.

Dr. M. Sreekumar

1. Suggested to include topics on DGCA licensing and add latest edition text books and References.
2. Fourth semester is too early for specialization and suggested to ensure basic level courses.
3. Aerodynamics for Drones syllabus content is heavy.
4. Simulation to be added.
5. Vibration and Aero Elasticity handling faculty to be sent for FDPs.

Dr. J. Bruce Ralphin Rose

1. Suggested to Change the course name of Introduction of UAV
2. For adaptive wing technology few topics should be added
3. Guest lectures to be arranged for Vibration and Aero Elasticity topics
4. Biomimics topics and bio inspired technology to be added in the syllabus content.

Mr. M. Balasundaram

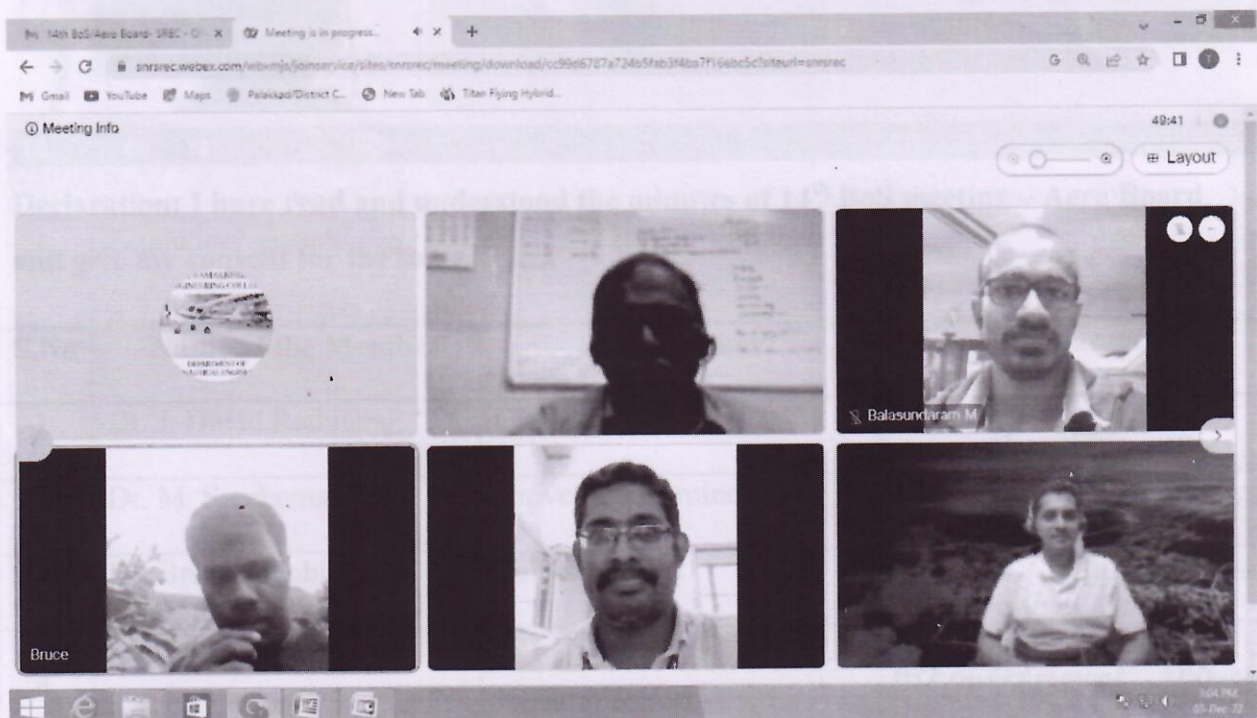
1. Drone Technology specialization is emerging and is the need of the hour with high potential.
2. Few lectures could be arranged for Vibration and Aero Elasticity through IITs.
3. Battery Technology for UAVs may be concentrated.

Mr. Mohamed Ibrahim Mohideen - Industry Expert

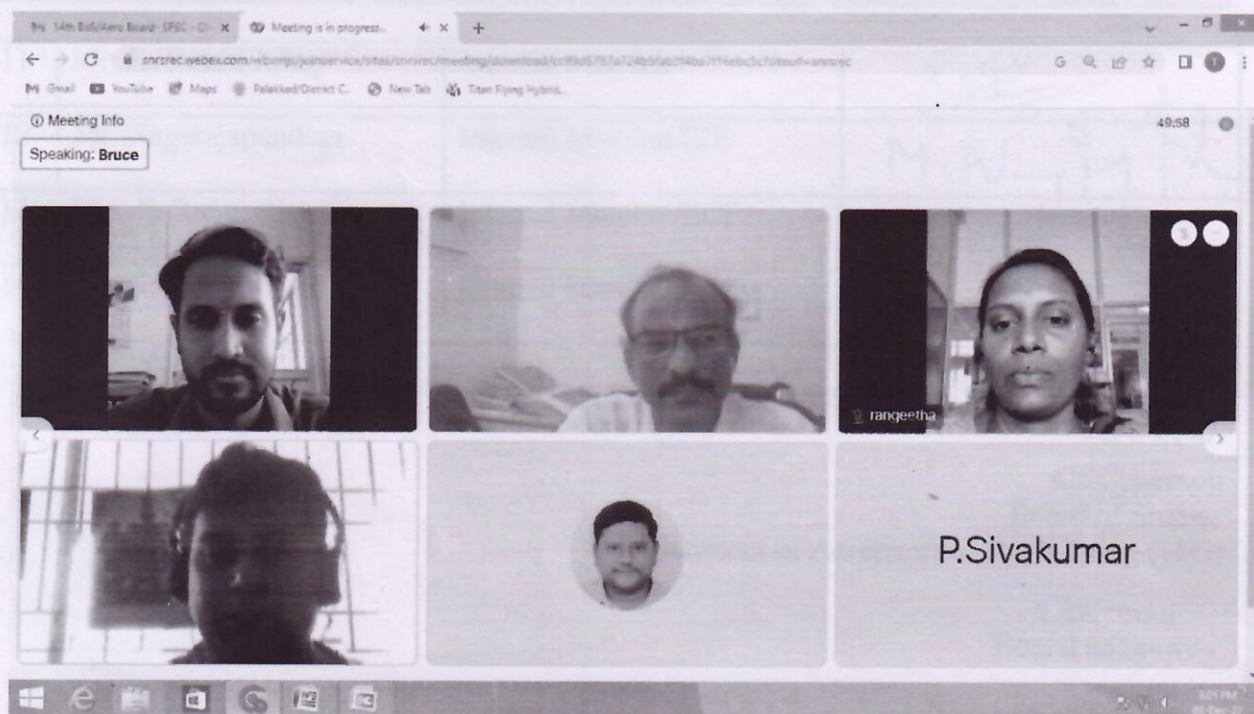
- Avionics Specialization could be provided
- Battery management system BMS is vital

Dr.C.J.Thomas Renald , Associate Professor/Aero proposed the vote of thanks.

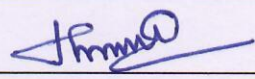
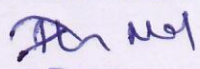
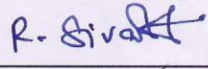
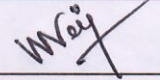
Photo of attendees for the Meeting:

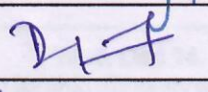


5	Dr. Raman Mohan	Subject Expert from Other University	Acknowledgement obtained this mail
6	Mr. Balasundaram M	Mentoratus Alumni	Acknowledgement obtained this mail
7	Dr. C. J. Thomas Renald	Member & BoS Coordinator	Mr. Raj
8	Mr. C. Dinesh	Internal Member	C. J. Thomas
9	Mr. R. Sivakumar	Internal Member	R. Sivakumar
10	Mr. R. Ranga Raj	Internal Member	Mr. Raj



Declaration: I have read and understood the minutes of 14th BoS meeting – Aero Board and give my consent for the same.

S.No	Name of the Member	Designation	Signature
1	Dr. J. David Rathnaraj	Chairperson	
2	Dr. M. Sree Kumar	University Nominee	Acknowledgement obtained thro' mail
3	Dr. Bruce Ralphin Rose	Subject Expert	Acknowledgement obtained thro' mail
4	Mr. Mohamed Ibrahim Mohideen	Industry Expert	Acknowledgement obtained thro' mail
5	Dr. Ranjith Mohan	Subject Expert from Other University	Acknowledgement obtained thro' mail
6	Mr. Balasundaram M	Meritorius Alumnus	Acknowledgement obtained thro' mail
7	Dr. C. J. Thomas Renald	Member & BoS Coordinator	
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9	Mr. R. Sivakumar	Internal Member	
10	Mr. R. Ranga Raj	Internal Member	

11	Mr. K. Robin Johny	Internal Member	
12	Mr. Nagarajapandian	Internal Member/EIE	M.N. Nagarajapandian
13	Mrs. S. Rangeetha	Internal Member/ECE	
14	Mr. N. Vigneshwar	Internal Member/Maths	N. Vigneshwar



Chairperson

Board of Studies

Department of Aeronautical Engineering (U.G)

Chairman
Board of Studies

20AEXX	Introduction to UAV	3 0 0 3
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Course Outcomes

On successful completion of the course, students will be able to

CO1: Explain the working principle of fixed wing, rotary wing, and flapping wing UAV

CO2: Brief on the historical events lead to the development of UAVs

CO3: Understand the drone rules imposed by the Indian Government

CO4: List the uses of drones, its advantage and disadvantages

Historical Developments

15

Hot air Balloon, Balloon Bomb, First Aerial Photograph, UAV Torpedo, Target aircrafts- Radio Controlled Aircraft. Drone programme of United States, First FPV Plane, Contribution of Israel, Predator Programme, Civilian Drones. Case Study: Parrot and DJI Drones.

Classification of UAVs

15

Fixed wing UAV: Classifications, Examples, Advantages and disadvantages. Rotary wing UAV: Classification, Working principle, Advantages and disadvantages, examples. Flapping wing: Working principle, challenges, advantages and disadvantages. Hybrid UAV: Working principle, Examples. Case Study: Urban Air Mobility Vehicles.

Applications and Drone Rules

15

Classification of drones based on weight, Airspace: red, yellow and green zone. Digital Sky platform, form D1 to D4, Licensing procedure, Type certificate.

Applications: Photogrammetry, medical services, Agricultural services, Surveillance and reconnaissance.

Text Book

1. “Basics of Unmanned Aerial Vehicles: Time to start working on Drone Technology”, Gravit Pandya, Notion Press, 2021.
2. “Introduction to UAV Systems”, Fourth Edition, Paul Gerin Fahlstrom, Thomas James Gleason , Willey, 2012.
3. Reg Austin, “Unmanned Aircraft Systems: UAVS Design, Development and Deployment”, John Wiley & Sons, 2011.

Reference:

1. Unmanned Air Systems UAV Design Development and Deployment, Reg Agustin, Wiley, 2010.
2. R. Kurt Barnhart, Douglas M. Marshall, Eric Shappee, Michael Thomas Most, “Introduction to Unmanned Aircraft Systems”, CRC Press, 2016.
3. <https://digitalsky.dgca.gov.in/>

Course Outcomes

On successful completion of the course, students will be able to

CO1: Understand the concept of fluids.

CO2: Explain the effect of Physical condition on flight of an aircraft.

CO3: Interpret the effect of wing planforms and choose based on application

CO4: Describe aeroelasticity and its effects

CO5: Understand the concept of Biomimetics

Fluids 10

Definition, Physical Properties, Laminar and turbulent flow, Reynolds Number, Shear force and Boundary Layer.

Aerodynamic Forces 16

Atmosphere, Physical Structure, International Standard Atmosphere, Generation of Aerodynamic forces, Lift and Drag. Airfoils - Nomenclature, Symmetric and cambered airfoils, effect of thickness and camber, Low speed, high lift airfoils, laminar profiles. Drag - Types, sources of drag, methods opted to minimize drag,

Wings 11

Wing planform, effect of Aspect ratio, taper ratio and wing sweep. Aero elasticity and its effects, Aero elastic Wing.

Biomimetics 8

Definition, Biomimetics in aviation, Morphing Wings, Crouching Mechanism, Studies on Drag minimizing, humpback whale wind turbines, Formation Flying.

TEXT BOOK

1. Anderson, J.D., "Fundamentals of Aerodynamics", 5th Edition, McGraw Hill Book Co, 2016
2. Randal W. Beard & Timothy W. McLain, "Small Unmanned Aircraft: Theory and Practice" Princeton University Press, 2016

REFERENCES

1. E. L. Houghton P. W. Carpenter Steven Collicott Daniel Valentine, "Aerodynamics for Engineering Students", 7th Edition, Butterworth-Heinemann, 2016.
2. John J. Bertin, Russell M. Cummings, "Aerodynamics for Engineers", Pearson Education, 2013.
3. Veronika Kapsali, "Biomimicry for Designers", WW Norton, 2016.
4. Sandy B. Primrose "Biomimetics: Nature-Inspired Design and Innovation" John Wiley & Sons Ltd 2020.

**SREC**

Thomas Renald <thomasrenald.joseph@srec.ac.in>

14th BoS minutes- Aero Board- Reg.

10 messages

Thomas Renald <thomasrenald.joseph@srec.ac.in>

Tue, Dec 13, 2022 at 9:06 PM

To: Sreekumar M <msh@iitdm.ac.in>, Ranjith Mohan <ranjith.m@iitm.ac.in>, Mohammed.Ibrahim@honeywell.com, bruce@auttl.ac.in, Bruce Rose <bruceralphin@gmail.com>, mbala@iitk.ac.in, Robin Johny K <robinjohny.k@srec.ac.in>, HoD Aero <hod-aero@srec.ac.in>, Nagarajapandian M <nagarajapandian.m@srec.ac.in>, Vigneswar Nandhakumar <vigneshwar.nandhakumar@srec.ac.in>, Rangeetha S <rangeetha.s@srec.ac.in>, dinesh chandran <dinesh.chandran@srec.ac.in>, Ranga Raj R <rangaraj.rangaswamy@srec.ac.in>, siva kumar Ramakrishnan <sivakumar.ramakrishnan@srec.ac.in>

Dear Sir,

PFA the minutes of the 14th BoS - Aero Board conducted on 03.12.2022 for your perusal. Pls acknowledge the same through a reply mail at the earliest.

With Regards

Dr.C.J.Thomas Renald Ph.D

Associate Professor/Aeronautical

Sri Ramakrishna Engineering College

Coimbatore- 641022

9894956436

3 attachments**14th BoS Minutes.doc**

1833K

**Introduction to UAV final.doc**

37K

**Aerodynamics of Drones final.doc**

37K

Ranjith Mohan <ranjith.m@iitm.ac.in>

Tue, Dec 13, 2022 at 9:21 PM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Thanks. In agreement with the recorded Minutes.

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>**Sent:** Wednesday, December 14, 2022 10:36 AM**To:** Sreekumar M; Ranjith Mohan; Mohammed.Ibrahim@honeywell.com; bruce@auttl.ac.in; Bruce Rose; mbala@iitk.ac.in; Robin Johny K; HoD Aero; Nagarajapandian M; Vigneswar Nandhakumar; Rangeetha S; dinesh chandran; Ranga Raj R; siva kumar Ramakrishnan**Subject:** 14th BoS minutes- Aero Board- Reg.

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mistake and delete this e-mail from your system. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Ranjith Mohan <ranjith.m@iitm.ac.in>

Tue, Dec 13, 2022 at 10:04 PM

Thank you Sir
[Quoted text hidden]

Balasundaram M <balaspeakin@gmail.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Wed, Dec 14, 2022 at 8:20 AM

Thank you sir. Mail received.

[Quoted text hidden]
[Quoted text hidden]
[Quoted text hidden]

BRUCE AUTTVL <bruce@auttv.ac.in>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Wed, Dec 14, 2022 at 9:06 AM

Yes Prof. Received.

On Wed, 14 Dec 2022, 10:37 Thomas Renald, <thomasrenald.joseph@srec.ac.in> wrote:

[Quoted text hidden]
[Quoted text hidden]

Mohideen, Mohammed Ibrahim (IFS COE) <Mohammed.Ibrahim@honeywell.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Thu, Dec 15, 2022 at 7:35 PM

I hereby acknowledge and agree to BoS board meeting conducted on 3rd Dec 2022.

Regards

Ibrahim

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>
Sent: 14 December 2022 10:37
To: Sreekumar M <msk@iitdm.ac.in>; Ranjith Mohan <ranjith.m@iitm.ac.in>; Mohideen, Mohammed Ibrahim (IFS COE) <Mohammed.Ibrahim@honeywell.com>; bruce@auttv.ac.in; Bruce Rose <bruceralphin@gmail.com>; mbala@iitk.ac.in; Robin Johnny K <robinjohnny.k@srec.ac.in>; HoD Aero <hod-aero@srec.ac.in>; Nagarajapandian M <nagarajapandian.m@srec.ac.in>; Vigneswar Nandhakumar <vigneshwar.nandhakumar@srec.ac.in>; Rangeetha S <rangeetha.s@srec.ac.in>; dinesh chandran <dinesh.chandran@srec.ac.in>; Ranga Raj R <rangaraj.rangaswamy@srec.ac.in>; siva kumar Ramakrishnan <sivakumar.ramakrishnan@srec.ac.in>
Subject: [External] 14th BoS minutes- Aero Board- Reg.

WARNING: This message has originated from an External Source. This may be a phishing email that can result in unauthorized access to Honeywell systems. Please use proper judgment and

caution when opening attachments, clicking links or responding.

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Ranjith Mohan <ranjith.m@iitm.ac.in>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Thu, Dec 22, 2022 at 6:14 PM

Dear Sir,

Appears that the college has transferred to me honorarium for the BoS meeting. Apart from giving feedback on the drone course prior to the meeting I have not really contributed. I can return this amount or in lieu of that we can have one or two lectures to the students and faculty of aero dept. on a topic aligned with my research/ teaching.

Please let me know.

Sincerely,

Ranjith

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>
Sent: Wednesday, December 14, 2022 11:34 AM
To: Ranjith Mohan
Subject: Re: 14th BoS minutes- Aero Board- Reg.

[Quoted text hidden]

Sreekumar M <msh@iitdm.ac.in> Fri, Dec 30, 2022 at 11:11 AM
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>
Cc: Ranjith Mohan <ranjith.m@iitm.ac.in>, Mohammed Ibrahim <mohammed.ibrahim@honeywell.com>, Bruce Rose <bruceralphin@gmail.com>, mbala@iitk.ac.in, Robin Johny K <robinjohny.k@srec.ac.in>, HoD Aero <hod-aero@srec.ac.in>, Nagarajapandian M <nagarajapandian.m@srec.ac.in>, Vigneshwar Nandhakumar <vigneshwar.nandhakumar@srec.ac.in>, Rangeetha S <rangeetha.s@srec.ac.in>, dinesh chandran <dinesh.chandran@srec.ac.in>, Ranga Raj R <rangaraj.rangaswamy@srec.ac.in>, siva kumar Ramakrishnan <sivakumar.ramakrishnan@srec.ac.in>

Sorry for the late reply.

Pl mention the latest edition of all text and ref books. For Eg, there is the latest edition (2022) for "Introduction to UAV systems", whereas 2012 year has been mentioned. Please cross-check for all other text and ref books. <https://www.wiley.com/en-in/Introduction+to+UAV+Systems,+5th+Edition-p-9781119802617>

Aerodynamics of Drones: Aerodynamics of multi-rotor drones, hybrid drones included?. There should be latest text books (after 2016), pl check

My designation in the minutes shall also be changed as under

Thanks and kind regards

Sreekumar

Dr. M. Sreekumar, PhD (IIT Madras)
[Professor and Head-Centre for AI, IoT, and Robotics](#)
Department of Mechanical Engineering
Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram
(An Institute of National Importance, Ministry of Education, Government of India)
Chennai-600 127, India
Web: <http://www.iiitdm.ac.in/People/displayProfileFaculty.php?msk@iiitdm.ac.in>

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[Quoted text hidden]

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Sreekumar M <msk@iiitdm.ac.in>

Mon, Jan 9, 2023 at 8:42 PM

Dear Sir,

PFA the minutes of the 14th BoS - Aero Board conducted on 03.12.2022 for your perusal. The suggestions are incorporated for your perusal. Pls acknowledge the acceptance of the minutes through a reply mail at the earliest.

Suggestion 1:

Pl mention the latest edition of all text and ref books. For Eg, there is the latest edition (2022) for "Introduction to UAV systems", whereas 2012 year has been mentioned. Please cross-check for all other text and ref books. <https://www.wiley.com/en-in/Introduction+to+UAV+Systems,+5th+Edition-p-9781119802617>

Addressed: The book suggested has been included.

Suggestion 2:

Aerodynamics of Drones: Aerodynamics of multi-rotor drones, hybrid drones included?. There should be latest text books (after 2016), pl check

Addressed: Aerodynamics of Drones: Aerodynamics of multi-rotor drones, hybrid drones are not included as these topics require pre-requisites courses to be addressed. The UAV vertical bundle has been planned for 8 courses and any 6 is required for minors. In the next BoS, we shall introduce the Aerodynamics of multi-rotor drones, hybrid drones.

The latest text book in the year 2017 is added.

My designation in the minutes shall also be changed as under.

Suggestion 3:

Addressed: Dr. M. Sreekumar - University Nominee

Professor and Head-Centre for AI, IoT, and Robotics,
Department of Mechanical Engineering,
IITDM Kancheepuram,
Vandalur - Kelambakkam Road,
Chennai - 600 127

With Regards

Dr.C.J.Thomas Renald Ph.D
Associate Professor/Aeronautical
Sri Ramakrishna Engineering College
Coimbatore- 641022
9894956436

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3 attachments



14th BoS Minutes 10.doc
1833K



Introduction to UAV (4).docx

12K



Aerodynamics of Drones (2).docx

12K

Sreekumar M <msk@iiitdm.ac.in>

Mon, Jan 9, 2023 at 9:01 PM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Very Good Morning

It is fine now, pl go ahead

Thanks and kind regards

Sreekumar

Dr. M. Sreekumar, PhD (IIT Madras)

Professor and Head-Centre for AI, IoT, and Robotics

Department of Mechanical Engineering

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram

(An Institute of National Importance, Ministry of Education, Government of India)

Chennai-600 127, India

Web: <http://www.iiitdm.ac.in/People/displayProfileFaculty.php?msk@iiitdm.ac.in>

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SRI RAMAKRISHNA ENGINEERING COLLEGE

[Educational Service: SNR Sons Charitable Trust]
[Autonomous Institution, Reaccredited by NAAC with 'A+' Grade]
[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]
[ISO 9001:2015 Certified and All Eligible programmes Accredited by NBA]
Vattamalaipalayam, N.G.G.O. Colony Post,
COIMBATORE - 641 022

Minutes of the **13th Board of Studies meeting** for the **B.E Aeronautical Engineering** programme held on 26th February 2022 at 3.00 PM on online/offline mode hosted by the Department of Aeronautical Engineering in the auditorium Board room.

The following members attended the above meeting.

1. **Dr. J. David Rathnaraj** – *Chairperson*
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr. M. Sreekumar** - *University Nominee*
Associate Professor,
Department of Mechanical Engineering,
IITDM Kancheepuram,
Vandalur - Kelambakkam Road,
Chennai - 600 127
3. **Dr. J. Bruce Ralphin Rose** - *Subject Expert*
Associate Professor,
Department of Aeronautical Engineering,
Anna University Regional Campus,
Tirunelveli - 627 007
4. **Dr. C. J. Thomas Renald**–*Member & Department BoS Coordinator*
Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.
5. **Mr. C. Dinesh**–*Member*
Assistant Professor (Sr.G),

Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

6. **Mr. R. Rang Raj**–*Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

7. **Mr. R. Sivakumar** – *Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

8. **Mr. K. Robin Johny** – *Member*
Assistant Professor (O.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Members who attended the above meeting through online mode are mentioned below:

Meeting link

<https://snrsrec.webex.com/snrsrec/j.php?MTID=m60675a1d0e60ba2660582bd85be6177b>

Meeting number (access code): 2644 344 6225

Meeting password: 13bos

9. **Dr. Ranjith Mohan** – *Subject Expert from other University*
Assistant Professor,
Department of Aerospace Engineering,
IIT Madras.

10. **Mr. Balasundaram M (2010 – 2014)** – *Meritorious Alumnus*
PhD Scholar,
Dept. of Aerospace Engineering,
IIT Kanpur

11. **Mr. Nagarajapandian** – *Member*
Assistant Professor (Sr.Gr),
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,

Coimbatore – 641 022

12. Mrs. S. Rangeetha– Member

Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

13. Mr. N. Vigneshwar– Member

Assistant Professor,
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

14. Mr. Mohamed Ibrahim Mohideen - Industry Expert

Principal System Engineer,
Honeywell Technologies,
Bengaluru - 560 103

Prof. J. David Rathnaraj, Chairperson, Board of Studies, chaired the meeting and Dr. C. J. Thomas Renald, BoS Department Coordinator welcomed all the members to the 13th -BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed.

UG Programmes:

R2020

1. It is resolved that Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2020 & onwards.
2. It is resolved that the syllabi for the following new Professional Elective and Open Elective courses under Regulations 2020 be approved and passed.

Professional Electives		
1.	20AE2E01	Sports and Building Aerodynamics
2.	20AE2E02	Experimental Aerodynamics
3.	20AE2E03	Hypersonic Aerodynamics
4.	20AE2E04	Experimental Stress Analysis
5.	20AE2E05	Fatigue & Fracture Mechanics

6.	20AE2E06	Futuristic Frames and Its Techniques
7.	20AE2E07	Heat Transfer
8.	20AE2E08	Combustion & Emission
9.	20AE2E09	Cryogenic Engineering
10.	20AE2E10	High Temperature Materials
11.	20AE2E11	Nanomaterials & Applications
Open Electives		
1.	20AE2E54	Automotive Aerodynamics
2.	20AE2E55	Space: The Final Frontier

3. It is resolved that the following new one credit courses will be included under Regulations 2020 for B.E. Aeronautical programme.

20AEI003 - Cessna 152 & R11F2S300 Engine

4. It is resolved that the following NPTEL courses are approved for credit transfer during December 2021 for R2020 & R2016

S.No.	Course Code	Course Title	Duration
1	noc21-me83	Product Design and Development	4 weeks
2	noc21-me77	Foundation of Computational Fluid Dynamics	8 weeks
3	noc21-ae12	Introduction to Aircraft Design	12 weeks
4	noc21-me120	Automation in Manufacturing	12 weeks
5	noc21-ge20	Fundamentals of Artificial Intelligence	12 weeks
6	noc21-me104	Rapid Manufacturing	12 weeks
7	noc21-mm18	Techniques of Material Characterization	12 weeks
8	noc21-mm27	Mechanical Behavior of Materials	12 weeks

5. It is resolved that the NPTEL courses are approved for credit transfer during May 2022. For R2020 & R2016

S.No.	Course Code	Course Title	Duration
1	noc22-ae01	Aircraft Design	12 Weeks

2	noc22-me35	Fundamentals of Combustion	12 Weeks
3	noc22-me65	IC Engines and Gas Turbines	12 Weeks
4	noc22-me04	Principles of Industrial Engineering	12 Weeks
5	noc22-me10	Computer Integrated Manufacturing	12 Weeks

6. Amendment to Clause 35 of B.E./B.Tech programmes under Regulations 2020 for the 2020 – 2021 admitted students only.

For mandatory courses every student shall put in the required attendance and training as per the course requirement. However, the successful completion of one course from Personality and Character Development category (OR) one course from Allied Skills category is sufficient in addition to mandatory [EEC] Employment Enhancement Courses / department allied courses as prescribed in the curriculum of the programme concerned for the award of degree.

This decision are taken as ONE TIME MEASURE and with due approval from the academic council standing committee / competent authority for the 2020 – 2021 admitted students only.

R2016

7. It is resolved that Regulation 2016 (Version 1.0) will be followed (Choice Based Credit System) for all B.E./B.Tech. programmes for students admitted during the Academic year 2018-2019 and 2019-2020.

8. Amendment to Clause 3 of B.E./B.Tech programmes under Regulations 2016.

The clause 13 of Regulation 2016 V-1.0 (Choice Based Credit System) shall be completely exempted for the candidates admitted during the year 2018 – 2019 and 2019 – 2020 and they are permitted to appear for all the reappearance examinations in the subsequent semester upto the maximum period of study.

This decisions are taken as ONE TIME MEASURE and with due approval from the academic council standing committee / competent authority.

9. Amendment to Clause 15.3 of B.E./B.Tech programmes under Regulations 2016.

Clause	Existing	Amended
15.3	The student who fails in the laboratory	If a candidate fails to secure a pass or is

	course shall repeat the same in the subsequent semester and repeat the laboratory course again.	absent for the end semester examinations in the laboratory course he/she shall do reappearance registration for that laboratory course in the subsequent semester / when offered next. This is applicable for the candidates admitted under Regulations 2016.
--	---	---

10. It is resolved that the approved Summer School's / WinterSchool's / GIAN courses conducted by the foreign Universities for a minimum period of 10 days may be considered as equivalent to One Credit Course in the Regulation 2016 (Ver 1.0) / may be considered for credit transfer

11. It is informed that the register number allotted for the students admitted to the various UG/PG programmes from the academic year 2021 – 2022 will be prefixed with the college code 7181. Hence the register number will be as follows.

Register Number : 718121XXYYZZ

7181 – College Code

21 - Year of Admission

XX - Branch Code

Y - Section

ZZ - Serial number

12. Suggestion by expert members on Regulations, Curriculum, various courses and electives.

Dr. M. Ranjith, IITM

1. Foundation of CFD Course in NPTEL may be a repeat to students in the higher semesters - Maybe considered to be taken up by 2nd year students.
2. Low Speed Aerodynamics and High-Speed Aerodynamics Course to have 1 Tutorial Hour (L-2 T-1 P-0 C-3)
3. Sports and Building Aerodynamics
 - Suggested to include a Lab component as CFD is covered
 - Lecture hours in the 1st and 2nd module could be reduced
4. Experimental Aerodynamics
 - Constrains of Wind Tunnel test is repeated in Module 1 and 2

-
- Schlieren and Shadowgraph to be mentioned
 - 5. Hypersonic Aerodynamics
 - High Speed Aerodynamics to be added as pre-requisite
 - 6. Fatigue & Fracture Mechanics
 - Effect of hydrostatic pressure on fracture to be checked for relevance to course
 - Corrosion content already covered in Aircraft Materials and Processes
 - 7. Futuristic Frames and its Techniques
 - 3D printing & its materials could be added
 - Relevance of Reference 5 and 6 to be checked
 - 8. Automotive Aerodynamics
 - Lift for sports car to be included
 - 9. Space: The Final Frontier
 - Maybe give to offered to Aeronautical Students
 - Suggested to add the relevant content in Indian Space Missions
 - 10. Overall suggestion - Course load is high

Mr. M. Balasundaram

1. Suggestion to include a course “Introduction to Scientific Methods” in the 1st or 2nd Semester which includes content on Python/MATLAB
2. Experimental Aerodynamics
 - Dimensionless Analysis to be included
3. Heat Transfer
 - Appreciated use of MATLAB
4. Combustion & Emissions
 - CANTERA, an open-source tool could be used for calculations
 - Last module to be redrafted

Dr. M. Sreekumar

1. Suggested to include new topics/domains on
 - a. Zero Gravity design
 - b. Design Launching System
 - c. Swarm Drones
 - d. Underwater-Aerial Systems
 - e. Design Capsules
2. To add the Hours/per session in the One Time Measures
3. To add Academic Year in the One Time Measures - Online Semester Examination

Dr. J. Bruce Ralphin Rose

1. Suggested to Change course name from Aircraft Design to Aircraft Design Project
2. Aircraft Design Project must be in two phases - ADP - I and II

3. Suggested to add Topics/Domains on
 - a. Internet of Drones
 - b. Train Aerodynamics
 - c. Theory of Elasticity
 - d. Agriculture Drones
 - e. Ambulance Drones
 - f. Helicopter Aerodynamics
4. Avionics Specialist faculty is a requirement
5. Text and Reference books to be updated and numbers to be increased
6. Text and Reference books to include edition
7. AI to include Aerospace perspective
8. Suggested Aircraft Systems to be changed Aircraft Systems and Instruments

Mr. Mohammed Ibrahim Mohideen – Industry Expert

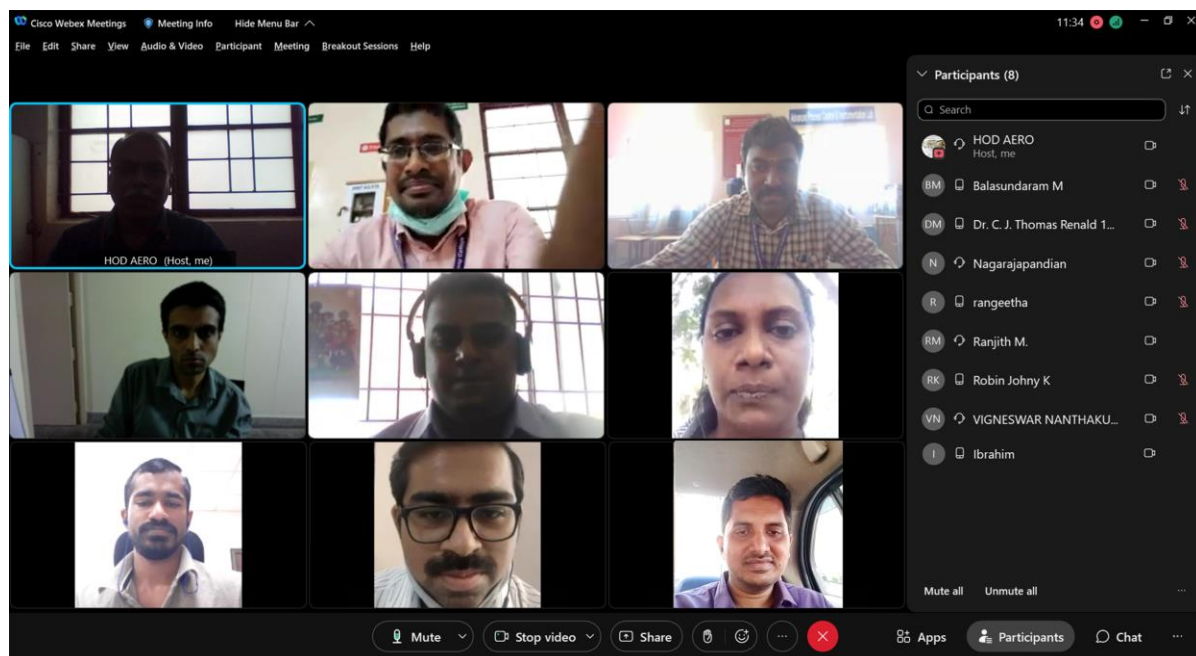
- Avionics Electives to be provided

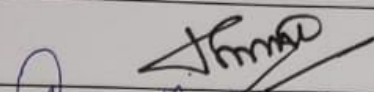
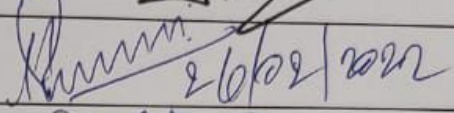
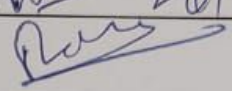
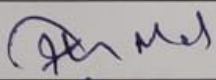
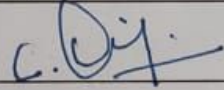
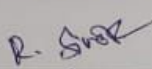
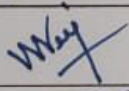
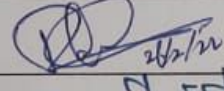
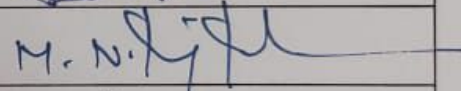
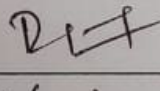
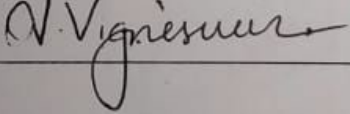
The following decisions are taken as one time measure due to the COVID Pandemic.

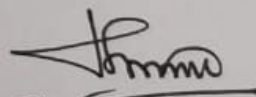
1. Classes to be handled online with 5 sessions per day.
2. End semester examination to be conducted online as per the state government and Anna University norms.

Mr. K. Robin Johny, AP/Aero proposed the vote of thanks.

Attendees for the Meeting:



S.No	Name of the Member	Signature
1	Dr. J. David Rathnaraj	
2	Dr. M. Sreekumar	 26/02/2022
3	Dr. Bruce Ralphin Rose	
4	Mr. Mohamed Ibrahim Mohideen	Acknowledgement obtained thro' mail
5	Dr. Ranjith Mohan	Acknowledgement obtained thro' mail
6	Mr. Balasundaram M	Acknowledgement obtained thro' mail
7	Dr. C. J. Thomas Renald	
8	Mr. C. Dinesh	
9	Mr. R. Sivakumar	
10	Mr. R. Ranga Raj	
11	Mr. K. Robin Johny	
12	Mr. Nagarajapandian	 M. N. Nagarajapandian
13	Mrs. S. Rangeetha	
14	Mr. N. Vigneshwar	


Chairperson

Board of Studies
Department of Aeronautical Engineering (U.G)



13 th BoS minutes- Aero Board- Reg.

8 messages

Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sat, Mar 5, 2022 at 2:51 PM

To: msk@iiitdm.ac.in, ranjith.m@iitm.ac.in, bruce@auttl.ac.in, Bruce Rose <bruceralphin@gmail.com>, mbala@iitk.ac.in, Mohammed.Ibrahim@honeywell.com

Dear Sir,

PFA the minutes of the 13th BoS - Aero Board for your perusal. Pls acknowledge the same through a reply mail at the earliest.

With Regards

Dr.C.J.Thomas Renald Ph.D
Associate Professor/Aeronautical
Sri Ramakrishna Engineering College
Coimbatore- 641022
9894956436



13th BoS Minutes.doc
1101K

Ranjith Mohan <ranjith.m@iitm.ac.in>

Sat, Mar 5, 2022 at 5:16 PM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Thank you. I agree with/approve the minutes.

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sent: Saturday, March 5, 2022 2:51 PM

To: msk@iiitdm.ac.in; Ranjith Mohan; bruce@auttl.ac.in; Bruce Rose; mbala@iitk.ac.in; Mohammed.Ibrahim@honeywell.com

Subject: 13 th BoS minutes- Aero Board- Reg.

[Quoted text hidden]

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BRUCE AUTTVL <bruce@auttl.ac.in>

Sat, Mar 5, 2022 at 10:47 PM

To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sir

Kindly refer to the enclosed document for the BOS minutes with my signature.
The contents are well-prepared and organized.

Good Work from SREC Team and acknowledge the receipt of this email.
Thank You

[Quoted text hidden]

[Quoted text hidden]

[Quoted text hidden]

--
with Regards,

*Dr. J.Bruce Ralphin Rose, M.E., Ph.D.,
Anna University.*



13th BoS Minutes.doc
1280K

Balasundaram M <balaspeakin@gmail.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sun, Mar 6, 2022 at 1:59 PM

Dear Professor,
Thanks for the mail. Apologies, I have one minor correction in the document. The point number - 1, "Scientific Methods" needs to be replaced by "Scientific Computing". I have enclosed a PDF, which discusses in detail about the numerical methods for beginners. Once again, thank you so much for the mail and the opportunity.

With best regards

Balasundaram M
PhD Student (AE)
IIT Kanpur
Uttar Pradesh - 208 016

On Sat, Mar 5, 2022 at 2:51 PM Thomas Renald <thomasrenald.joseph@srec.ac.in> wrote:

[Quoted text hidden]

[Quoted text hidden]



[E._Ward_Cheney,_David_R._Kincaid]_Numerical_Mathe(BookFi.org).pdf
5450K

Mohideen, Mohammed Ibrahim (IFS COE) <Mohammed.Ibrahim@honeywell.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Mon, Mar 7, 2022 at 9:31 AM

Dear Sir,

I acknowledge the BOS meeting minutes. Thanks.

Regards

Ibrahim

From: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Sent: 05 March 2022 14:51

To: msk@iiitdm.ac.in; ranjith.m@iitm.ac.in; bruce@auttl.ac.in; Bruce Rose <bruceralphin@gmail.com>;

mbala@iitk.ac.in; Mohideen, Mohammed Ibrahim (IFS COE) <Mohammed.Ibrahim@honeywell.com>
Subject: [External] 13 th BoS minutes- Aero Board- Reg.

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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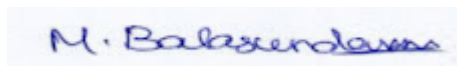
Balasundaram M <balaspeakin@gmail.com>
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Mon, Mar 7, 2022 at 10:17 AM

Dear Sir,
Please find the enclosed digital signature, if required.

Thanks & Regards

Balasundaram M
[Quoted text hidden]



Balasundaram_signature.jpg
12K

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Balasundaram M <balaspeakin@gmail.com>

Mon, Mar 7, 2022 at 10:41 AM

Dear Balasundaram,

Received your comments. Shall incorporate the same. Mostly digital signature not required as the correspondence is in mail. Still if required for documentation purpose, I shall use it and inform you the same.

Thank you,
[Quoted text hidden]

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Robin Johny K <robinjohny.k@srec.ac.in>

Tue, Mar 8, 2022 at 9:53 AM

[Quoted text hidden]



[E._Ward_Cheney,_David_R._Kincaid]_Numerical_Mathe(BookFi.org).pdf
5450K



SRI RAMAKRISHNA ENGINEERING COLLEGE

[Educational Service: SNR Sons Charitable Trust]
[Autonomous Institution, Accredited by NAAC with 'A' Grade]
[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]
[ISO 9001:2015 Certified and All Eligible programmes Accredited by NBA]
Vattamalaipalayam, N.G.G.O. Colony Post,
COIMBATORE - 641 022

MINUTES OF THE 12TH BOARD OF STUDIES MEETING FOR THE B.E AERONAUTICAL ENGINEERING PROGRAMME HELD ON 30TH APRIL 2021 AT 11:30 AM ON ONLINE PLATFORM (WEBEX), HOSTED BY THE DEPARTMENT OF AERONAUTICAL ENGINEERING.

The members of the Board of Studies are listed below:

1. **Dr.J.David Rathnaraj** – *Chairperson*
Professor & Head,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore-641 022.
2. **Dr.V.Arumugam** – *University Nominee*
Associate Professor,
Department of Aerospace Engineering,
Madras Institute of Technology Campus,
Anna University,
Chennai – 600 044.
3. **Mr.Gurusamy** – *Subject Expert from Central Govt. R&D Laboratories*
Deputy Manager,
Dynamics and Aero- Elasticity Group
Aircraft Research and Development Centre,
HAL, Bengaluru.
4. **Mr.S.Balaji** – *Expert from Industry*
Senior Manager- Planning
LMW Limited,
Advanced Technology Centre,
Coimbatore - 641006.

-
5. **Mr.K.Sudhakaran**– Expert from Industry
Manager- Design ,
Engineering Innovations
LMW Limited,
Advanced Technology Centre,
Coimbatore-641006.
 6. **Dr. Ranjith Mohan** –*Subject Expert from other University*
Assistant Professor,
Department of Aerospace Engineering,
IIT Madras.
 7. **Mr. Sree Raghav (2008-2012)**– *Meritorious Alumnus*
Senior Aircraft Design/Flight
Performance Engineer,
The ePlane Company,
IIT Madras.
 8. **Dr.C.J.Thomas Renald**–*Member & Department BoS Coordinator*
Associate Professor,
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore– 641 022.
 9. **Mr.C.Dinesh**–*Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
 10. **Mr.R.Rang Raj**–*Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
 11. **Mr.R.Sivakumar** – *Member*
Assistant Professor (Sr.G),
Department of Aeronautical Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

-
12. **Dr.B.Sharmila** – *Member*
Professor,
Department of Electronics and Instrumentation Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022
 13. **Mrs.S.Rangeetha**– *Member*
Assistant Professor (Sl.Gr),
Department of Electronics and Communication Engineering,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.
 14. **Mr.N.Vigneshwar**– *Member*
Assistant Professor,
Department of Mathematics,
Sri Ramakrishna Engineering College,
Coimbatore – 641 022.

Prof. J. David Rathnaraj, Chairperson, Board of Studies, chaired the meeting and Dr. C. J. Thomas Renald, BoS Department Coordinator welcomed all the members to the 12th - BoS meeting. After a brief introduction, the agenda items listed were taken up for discussion and the following resolutions were passed. Mr. Guruswamy and Mr. K. Sudhakaran expressed their inconvenience to attend the meeting, and their feedback on the curriculum was received in advance.

Item No: 1

Regulation 2016

1. It is resolved that Regulation 2016 (Version 1.0) will be followed (Choice Based Credit System) for all B.E./B.Tech. programmes for students admitted during the Academic year 2018-2019 and 2019-2020.
2. It is resolved that the approved Summer School's / WinterSchool's / GIAN courses conducted by the foreign Universities for a minimum period of 10 days may be considered as equivalent to One Credit Course in the Regulation 2016 (Ver 1.0) / may be considered for credit transfer.
3. It is resolved that the following NPTEL courses are approved for credit transfer during 2020-2021

Course Code	Course Name	Duration	Credits
Noc20-nc12	Product Design and Manufacturing	12 Weeks	3

4. Azhar Yousuf (1808004) of BE Aeronautical Engineering – A Scholarship student of the Prime Minister’s Special Scholarship Programme (J&K), was unable to attend the online classes during the Academic year 2020-2021. Henceforth, he will be allowed to continue his studies with his peers, whenever he’s able to, and must earn all the credits required for the successful completion of the BE Programme.

Item No: 2

Regulation Updates

- The following discussions are taken as one time measure due to the COVID Pandemic.
 - Classes to be handled online with 5 sessions per day.
 - End semester examination to be conducted online.
 - Question Pattern - 70 multiple choice for 70 marks and 15 subjective questions (15 x 2) for 30 marks for 2 hours duration.
- It is resolved that the Question paper setting ratio to be increased to 50% for the internal question paper setters for the end semester examination from 2020-2021 onwards.
- It is resolved that the Valuation Answer Script ratio to be raised to 75% in the end semester examinations from 2020-2021 onwards.
- It is resolved that the following Question Paper pattern is approved for Continuous Assessment Tests.

Course Type	Question Pattern	Marks	Total Marks	Duration
3 / 4 / 2 Credit Courses	7 Multiple choice Questions 3 Fill in the Blanks without Choice 5 Short Answers 3 Descriptive Answers (2 out of 3) + One Compulsory Question	7 Marks 3 Marks 10 Marks 30 Marks	50 Marks	120 Minutes
Design Paper	02 Design Questions (Open Book test)	25 Marks Each	50 Marks	120 Minutes

5. It is resolved that the following Question Paper pattern is approved for End Semester Examinations.

Course Type	Question Pattern	Marks	Total Marks	Duration
3 or 4 Credit Paper	7 Objective Questions (MCQ) 3 Fill in the blanks without Choice 5 short Answers 5 Descriptive answers (4 out of 6) + One Compulsory Question	7 Marks 3 Marks 15 Marks 75 Marks	100	180 minutes
2 Credit Paper & Theory cum Lab papers	5 Multiple choice Questions 5 Short Answers 5 Descriptive Answers (4 out of 6) + One Compulsory Question	5 Marks 15 Marks 50 Marks	70	150 minutes
Design Paper	04 Design Questions (4 out of 5)	25 Marks each	100	180 minutes

Item No: 3

Regulation 2020

1. It is resolved that Regulation 2020 (Learning Outcome based Curriculum through Choice based Credit) will be followed for all B.E./B.Tech. programmes for students admitted in the Academic year 2020 & onwards.
2. For candidates admitted under Regulation 2020, the minimum number of credits to be earned for the successful completion of all B.E./B.Tech. programmes for regular candidates is 162 and later entry candidates is 120.
3. It is resolved that the curriculum and syllabi under Regulations 2020 be approved for the categories of HS/BS/ES/PC/OE of B.E. Aeronautical Engineering.
4. It is resolved that the mandatory courses shall be in the following courses under Regulation 2020

Category	Course Title	
Personality and Character Development	Sports and Games Empowerment through Yoga National Cadet Corps National Service Scheme	Any one Course

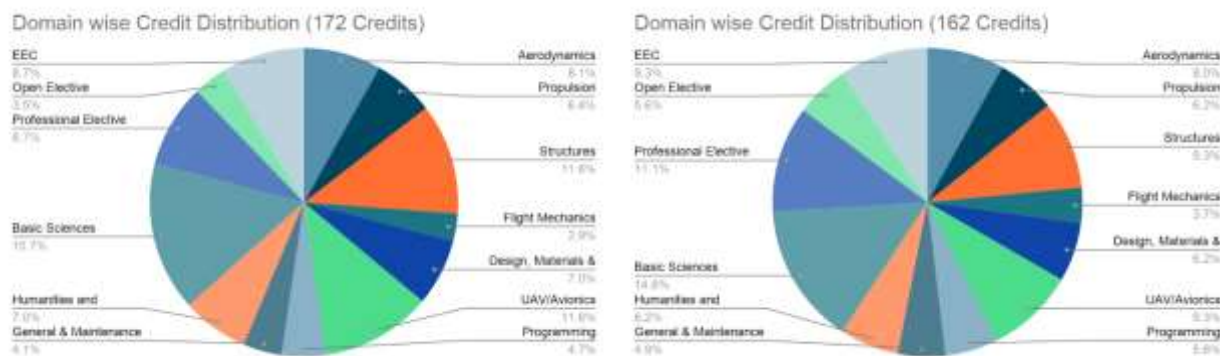
	Youth Red Cross Co Curricular Activities Extra Curricular Activities Aptitude/Soft Skills	
Allied Skills	English Proficiency Certification Foreign / Vernacular Languages Technical Certification Courses	Any one Course
Additional Courses	Mandatory courses recommended by the Career Development and Placement Division Bureau of Overseas Education Entrepreneur Development Cell	Any one Course

The candidate must complete one course in each category to be eligible for the award of the degree.

Item No: 3

Curriculum R2020

1. Highlights of the Curriculum proposed for the new Regulation 2020 was presented
2. Credit Distribution comparison between R2016 and R2020 was presented along with a Domain Credit Distribution comparison



3. It is resolved that the curriculum and syllabi under Regulations 2020 be approved for the categories of HS/BS/ES/PC/OE of B.E. Aeronautical Engineering.

Credits Distribution by Course Category – R2020

S. No.	Course Category	Total Credits	Allowable Credits	AICTE Norms
1.	Humanities and Sciences (HS)	10	9-11	12
2.	Basic Sciences (BS)	24	23-25	25
3.	Engineering Sciences (ES)	29	25-27	24
4.	Professional Core (PC)	57	57	48
5.	Professional Electives (PE)	18	18	18
6.	Open Electives (OE)	9	9	18
7.	Employability Enhancement Courses (EEC)	15	15	15
	Total	162	162	160

Summary of Credits – R2020

S. No.	Course Category	Credits per Semester								Total Credits	Allowable Credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	6							10	9-11
2.	BS	10	8	3	3					24	23-25
3.	ES	3	8	12	3	3				29	25-27
4.	PC	3		7	13	15	19			57	57
5.	PE					3	3	12		18	18
6.	OE			3	3	3				9	9
7.	EEC				3	1	2	1	8	15	15
	Total	20	22	25	25	25	24	13	8	162	162

Semester 1

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.	20HS270	Preliminary Business English	HS	45	2	0	2	3
2.	20AE201	Liberal Arts - Indian Space Missions	HS	15	1	0	0	1
3.	20MA202	Matrices, Differential Calculus and Transforms	BS	45	2	1	0	3
4.	20PH202	Waves and Optics	BS	30	2	0	0	2
5.	20CH202	Chemical Science	BS	30	2	0	0	2
6.	20BM206	Life Sciences - Biology for Engineers	BS	15	1	0	0	1
7.	20EC202	Aircraft Electrical and Electronics Systems	ES	45	3	0	0	3
8.	20AE202	Basic Flight Science	PC	30	2	0	0	2
PRACTICALS								
9.	20BS270	Basic Sciences Laboratory	BS	15	0	0	2	1
10.	20EC270	Basic Electrical and Electronics Laboratory	ES	15	0	0	2	1
11.	20AE270	Aero Engineering Workshop Practices	PC	15	0	0	2	1
TOTAL				24/week	15	1	8	20

Semester 2

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.	20HS202	Advanced Business English /	HS	45	2	0	2	3
	20HS203	Technical Writing /	HS		2	0	2	3
	20HS204	Basic German /	HS		3	0	2	3
	20HS205	Basic Japanese	HS		3	0	2	3
2.	20AE203	Aviation Management	HS	45	3	0	0	3
3.	20MA205	Calculus and Numerical Methods	BS	45	3	0	0	3
4.	20PHXXX	Aircraft Materials and Processes	BS	30	2	0	0	2
5.	20CS242	Artificial Intelligence	BS	30	2	0	0	2
6.	20CE205	Engineering Mechanics	ES	45	3	0	0	3
7.	20EI251	Aerospace Sensors and Instrumentation	ES	30	2	0	0	2
8.	20XXXX	Design Thinking	BS	15	1	0	0	1
PRACTICALS								
9.	20AE271	Computing Laboratory	BS	15	0	0	2	1
10.	20EI272	Aerospace Instrumentation Laboratory	ES	15	0	0	2	1
11.	20AE272	Engineering Drawing Practices	ES	15	0	0	2	1
TOTAL				27/week	19	0	8	22

Semester 3

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.	20MA210	Partial Differential Equations and Tensor Calculus	BS	45	3	0	0	3
2.	20AE203	Fluid Mechanics and Machinery	ES	45	3	0	0	3
3.	20AE204	Thermodynamics	ES	45	3	0	0	3
4.	20AE205	Mechanics of Materials	PC	45	3	0	0	3
5.	20EIXXX	Control Systems in Aeronautics	ES	30	2	0	0	2
6.	20CS241	Programming Foundations	ES	30	2	0	0	2
7.		Open Elective - I	OE	45	3	0	0	3
PRACTICALS								
8.	20AE273	Mechanical Sciences Laboratory	ES	15	0	0	2	1
9.	20AE274	Computer Aided Design Practices	PC	15	0	0	2	1
10.	20CS291	Programming Foundations Laboratory	ES	15	0	0	2	1
11.	20AE275	Mini Project - I	EEC	15	0	0	2	-
THEORY CUM LABORATORY								
12.	20AE251	Machining Science and Technology	PC	45	2	0	2	3
TOTAL				31/week	21	0	10	25

Semester 4

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.	20MA217	Transforms, Probability and Statistics	BS	45	3	0	0	3
2.	20AE206	Low Speed Aerodynamics	PC	45	3	0	0	3
3.	20AE207	Air Breathing Propulsion	PC	45	2	1	0	3
4.	20AE208	Aircraft Structural Mechanics	PC	45	2	1	0	3
5.	20AE209	Aircraft Systems	PC	30	2	0	0	2
6.	20CS243	Data Structures and Algorithm Analysis	ES	30	2	0	0	2
7.		Open Elective - II	OE	45	3	0	0	3
PRACTICALS								
8.	20AE276	Low Speed Aerodynamics Laboratory	PC	15	0	0	2	1
9.	20AE277	Aircraft Structures Laboratory	PC	15	0	0	2	1
10.	20CS292	Data Structures and Algorithm Analysis Laboratory	ES	15	0	0	2	1
11.	20AE275	Mini Project - I	EEC	15	0	0	2	2
12.	20AEIXXX	One Credit Course	EEC	15	0	0	0	1
TOTAL				28/week	18	2	8	25

Semester 5

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.	20AE210	High Speed Aerodynamics	PC	45	3	0	0	3
2.	20AE211	Rocket and Space Propulsion	PC	45	3	0	0	3
3.	20AE212	Aircraft Performance	PC	30	2	0	0	2
4.	20IT241	Programming in Python	ES	30	2	0	0	2
5.		Open Elective - III	OE	45	3	0	0	3
6.		Professional Elective - I	PE	45	3	0	0	3
PRACTICALS								
7.	20AE278	Propulsion Measurement Practices	PC	15	0	0	2	1
8.	20IT291	Programming in Python Laboratory	ES	15	0	0	2	1
9.	20AE279	Mini Project - II	EEC	15	0	0	2	-
10.	20XXXXX	Entrepreneurship/Placement/Higher Studies	EEC					1
THEORY CUM LABORATORY								
11.	20AE252	Avionics	PC	45	2	0	2	3
12.	20AE253	Finite Element Analysis	PC	45	2	0	2	3
TOTAL				30/week	20	0	10	25

Semester 6

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.	20AE213	Aircraft Structural Health Monitoring	PC	30	2	0	0	2
2.	20AE214	Aircraft Maintenance Engineering	PC	45	3	0	0	3
3.	20AE215	Aircraft Stability & Control	PC	45	3	0	0	3
4.	20AE216	Analysis and Design of Composite Materials	PC	45	3	0	0	3
5.		Professional Elective - II	PE	45	3	0	0	3
PRACTICALS								
6.	20AE280	Flight Training Laboratory	PC	15	0	0	2	1
7.	20AE281	Aircraft Design	PC	15	0	0	2	1
8.	20AE279	Mini Project - II	EEC	15	0	0	2	2
THEORY CUM LABORATORY								
9.	20AE254	Computational Fluid Dynamics	PC	45	2	0	2	3
10.	20AE255	Autonomous Aerial Robotic Systems	PC	45	2	0	2	3
TOTAL				28/week	18	0	10	24

Semester 7

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
THEORY								
1.		Professional Elective - III	PE	45	3	0	0	3
2.		Professional Elective - IV	PE	45	3	0	0	3
3.		Professional Elective - V	PE	45	3	0	0	3
4.		Professional Elective - VI	PE	45	3	0	0	3
5.		Industry Training/Internship	EEC					1
TOTAL				12/week	12	0	0	13

Semester 8

S. No.	Course Code	Course Title	Category	Contact Hours	L	T	P	C
PRACTICALS								
1.		Project Work	EEC	120	0	0	16	8
TOTAL				16/week	0	0	16	8

Suggestions by Expert members

Comments on Regulation 2020

- Constraints on the Category wise Credit Distribution provided by AICTE and the R2020 Curriculum was discussed

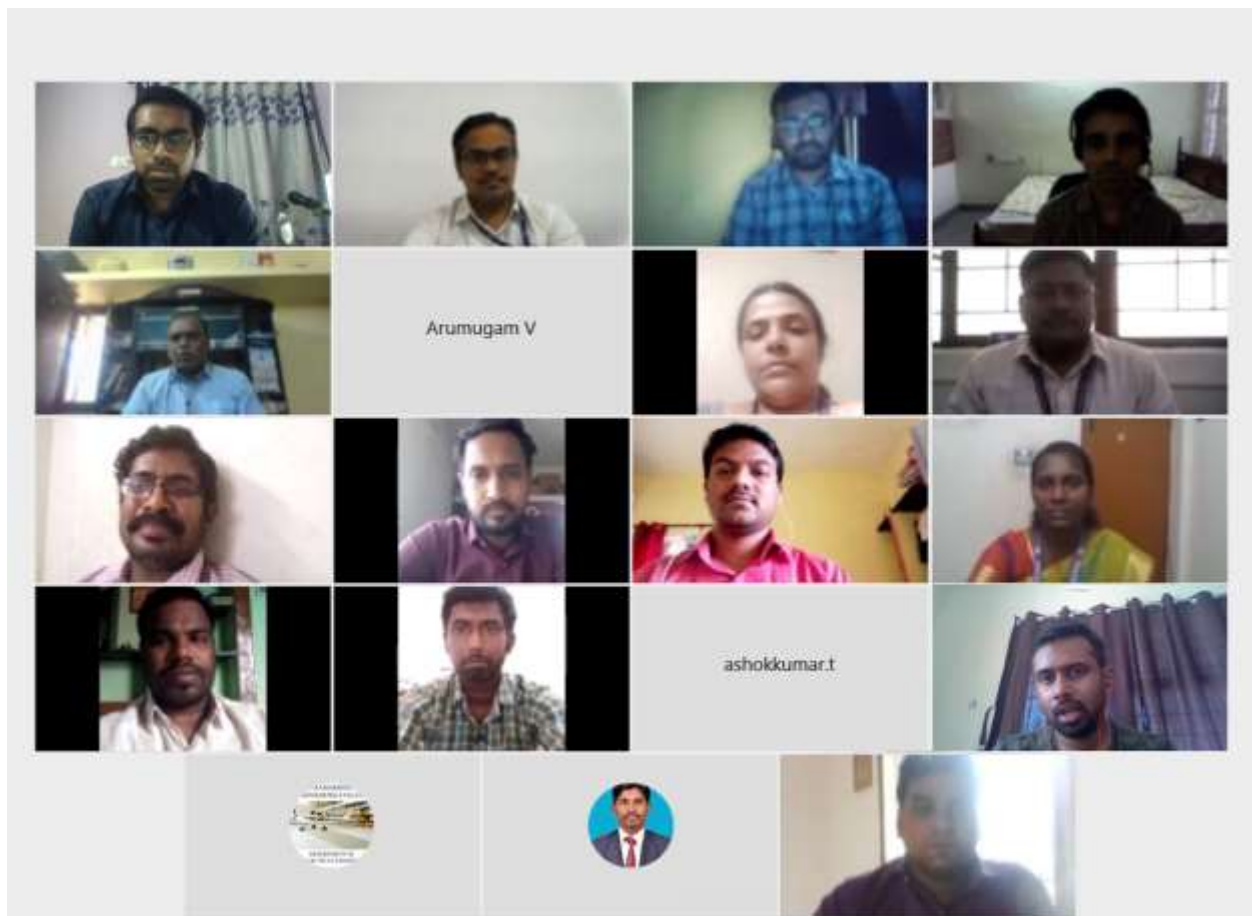
Comments on Curriculum

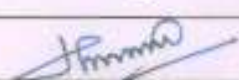
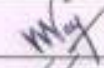
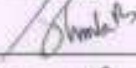
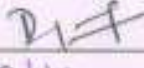
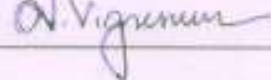
- Dr. V. Arumugam (University Nominee) suggested the following courses to be renamed:
 - Analysis and Design of Composite Materials to be renamed to Analysis and Design of Composite Structures
 - Rocket and Space Propulsion name to be changed to Space Propulsion
- He also suggested that Heat Transfer to be brought in to Professional Core or its contents to be covered in the regular curriculum - decision to be taken after discussion with domain faculties
- He suggested the names of the tools to be mentioned in the Detailed Syllabus
- Suggested to recheck the Prerequisites for Aircraft Structural Health Monitoring Course
- Dr. Ranjith Mohan (Subject Expert from other University) felt that the curriculum and courses have adequate 'breadth', but found lacking in 'depth'
- He suggested the focus of subjects to be more on Aeronautical oriented courses
- Complex Analysis to be included in Low Speed Aerodynamics Course – to be implemented after consultation with domain faculties

-
- Orbital Mechanics to be introduced in Space Propulsion course – to be implemented after consultation with domain faculties
 - Vibration and health monitoring could be considered as a core course – will be looked into after discussion with domain faculties
 - Control Systems to taught prior to Aircraft Stability and Control course – to be implemented in the updated curriculum
 - To ensure programming courses are completed before numerical techniques in mathematics
 - Mr. S. Balaji (Expert from industry) suggested to add Metrology content in GD&T Open Elective Course

Mr. K. Robin Johny, AP/Aero proposed the vote of thanks.

Attendees for the Meeting:



S.No	Name of the Member	Signature
1	Dr.J.David Rathnaraj	
2	Dr.V.Arumugam	Acknowledgement obtained thru mail
3	Mr.S.Balaji	Acknowledgement obtained thru mail
4	Dr. Ranjith Mohan	Acknowledgement obtained thru mail
5	Mr. Sree Raghav	Acknowledgement obtained thru mail
6	Dr.C.J.Thomas Renald	 Mail
7	Mr.C.Dinesh	
8	Mr.R.Sivakumar	
9	Mr.R.Ranga Raj	
10	Dr.B.Sharmila	
11	Mrs.S.Rangeetha	
12	Mr.N.Vigneshwar	



Chairperson
Board of Studies
Department of Aeronautical Engineering (U.G)

Fwd: Minutes of the 12th Board of Studies Meeting

1 message

Thomas Renald <thomasrenald.joseph@srec.ac.in>
To: Mohanraj D <mohanraj.d@srec.ac.in>

Mon, Oct 4, 2021 at 2:10 PM

----- Forwarded message -----

From: **Robin Johnny K** <robinjohnny.k@srec.ac.in>
Date: Mon, 4 Oct, 2021, 2:02 pm
Subject: Fwd: Minutes of the 12th Board of Studies Meeting
To: Thomas Renald <thomasrenald.joseph@srec.ac.in>

----- Forwarded message -----

From: **Vellayaraj Arumugam** <arumugam.mitaero@gmail.com>
Date: Mon, 4 Oct, 2021, 1:59 pm
Subject: Re: Minutes of the 12th Board of Studies Meeting
To: Robin Johnny K <robinjohnny.k@srec.ac.in>

Dear Sir

Received the minutes and please proceed with.

*"Rome is not built in one day "**Have a Nice Day*

With Best Regards

Dr Arumugam.V Bsc B.Tech M.E PhD

Professor

Department of Aerospace Engineering

MIT Campus, Anna University

Chromepet, Chennai-44

9444145210

On Mon, Oct 4, 2021 at 12:57 PM Robin Johnny K <robinjohnny.k@srec.ac.in> wrote:

Dear sir,

Reminder, requesting you to kindly provide your acknowledgment for the Minutes of the Board of Studies Meeting conducted earlier this year.

Regards,



Robin Johnny K
Assistant Professor
Aeronautical Engineering
Sri Ramakrishna Engineering College
m: 9677967216
w: www.srec.ac.in | robinjohnny.k@srec.ac.in


<https://orcid.org/0000-0002-3803-0841>

----- Forwarded message -----

From: **Robin Johnny K** <robinjohnny.k@srec.ac.in>
Date: Mon, Jun 28, 2021 at 1:36 PM
Subject: Minutes of the 12th Board of Studies Meeting

To: <arun.mitaero@gmail.com>, Ranjith M <ranjith.m@ae.ilm.ac.in>, Sudhakaran K <sudhakaran.k@lmw.co.in>, Balaji S <balaji.s@lmw.co.in>, Sree Raghav <ragavi@eplane.ai>, <sgurus2004@gmail.com>
Cc: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Dear sir,

Please find the attachment of the minutes for the 12th Board of Studies Meeting and also the finalized Curriculum and Syllabus for Regulations 2020.

We request you to kindly give your acceptance of the same with a reply to this email.

Regards,

Robin Johnny K

Assistant Professor
Aeronautical Engineering
Sri Ramakrishna Engineering College
M 9677967216
W www.srec.ac.in robinjohnny.k@srec.ac.in



<https://orcid.org/0000-0002-3803-0841>

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**Minutes of the 12th Board of Studies Meeting**

4 messages

Robin Johny K <robinjohny.k@srec.ac.in>

Mon, Jun 28, 2021 at 1:36 PM

To: arum.mitaero@gmail.com, Ranjith M <ranjith.m@ae.iitm.ac.in>, Sudhakaran K <sudhakaran.k@lmw.co.in>, Balaji S <balaji.s@lmw.co.in>, Sree Raghav <ragav@eplane.ai>, sgurus2004@gmail.com
Cc: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Dear sir,

Please find the attachment of the minutes for the 12th Board of Studies Meeting and also the finalized Curriculum and Syllabus for Regulations 2020.

We request you to kindly give your acceptance of the same with a reply to this email.

Regards,



Robin Johny K

Assistant Professor
Aeronautical Engineering,
Sri Ramakrishna Engineering College
M 9677967216
www.srec.ac.in | robinjohny.k@srec.ac.in



<https://orcid.org/0000-0002-3803-0841>

2 attachments

12th BoS Minutes.pdf
1112K

Aero R2020 Syllabus.zip
10924K

Sree Raghav <ragav@eplane.ai>

Mon, Jun 28, 2021 at 1:43 PM

To: Robin Johny K <robinjohny.k@srec.ac.in>

We are having a systematic approach in framing the syllabus and I was honoured to be a part of this.

I was satisfied with the content of the syllabus and I would accept/recommend to proceed the same.

Regards,

Sree Raghav R,

Aircraft Design/Performance Engineer,

The ePlane Company (eplane.ai),

IIT-Madras.

What are we building? Meet the Indian startup building an affordable electric 'flying taxi'

+91 8088018463 | [linkedin.com/in/sree-raghav-ab539331](https://www.linkedin.com/in/sree-raghav-ab539331)

(ePlane is regd. as Ubify technologies Private Limited)

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[Quoted text hidden]

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Balaji S <balaji.s@lmw.co.in>

Mon, Jun 28, 2021 at 1:48 PM

To: Robin Johny K <robinjohny.k@srec.ac.in>

Cc: Thomas Renald <thomasrenald.joseph@srec.ac.in>, "arum.mitaero@gmail.com" <arum.mitaero@gmail.com>, Ranjith M <ranjith.m@ae.iiit.ac.in>, Sudhakaran K <sudhakaran.k@lmw.co.in>, Sree Raghav <ragav@eplane.ai>, "sgurus2004@gmail.com" <sgurus2004@gmail.com>

Dear Robin,

With reference to the below mail, I hereby accept the Minutes for the 12th BOS and proceed further.

Regards,
Balaji S
LMW - ATC
28/06/2021

From: Robin Johny K <robinjohny.k@srec.ac.in>

Sent: Monday, June 28, 2021 1:36 PM

To: arum.mitaero@gmail.com <arum.mitaero@gmail.com>; Ranjith M <ranjith.m@ae.iiit.ac.in>; Sudhakaran K <sudhakaran.k@lmw.co.in>; Balaji S <balaji.s@lmw.co.in>; Sree Raghav <ragav@eplane.ai>; sgurus2004@gmail.com <sgurus2004@gmail.com>

Cc: Thomas Renald <thomasrenald.joseph@srec.ac.in>

Subject: Minutes of the 12th Board of Studies Meeting

[Quoted text hidden]

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Ranjith M <ranjith.m@ae.iiit.ac.in>

Tue, Jun 29, 2021 at 7:53 AM

To: Robin Johny K <robinjohny.k@srec.ac.in>

Accepted, included signature in the document.

Possible typo:

later entry--> is it lateral entry?

Sincerely,
Ranjith

~ Ranjith