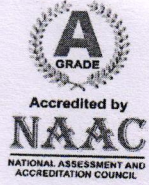




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**SCHOOL OF AERONAUTICAL ENGINEERING**



**BOARD OF STUDIES**

**B. TECH - AERONAUTICAL ENGINEERING / AEROSPACE  
ENGINEERING  
CURRICULUM  
Regulations 2020**

Minutes of the meeting for the Board of Studies held by Online mode in MS Teams 07/04/2020 at 10.00 AM

The following are the members for Board of studies

SI. NO	Member & affiliation	Designation
1.	Dr.S.Elangovan, Professor and Dean, School of Aeronautical Engineering, BIHER	Chairman
2.	Dr.R.Dhanaraj, Professor of Eminence, Department of Aerospace Engineering, Anna university MIT Campus Chennai.	Academic Expert Member
3.	Dr.K.Vijayaraja, Professor and head, Department of Aeronautical Engineering, KCG College of technology	Academic Expert Member
4.	Mr.A.Radhakrishnan, Chief Engineer, Air India.	Industry Expert Member
5.	Dr.J.HameedHussian, Dean-Engineering, BIHER	Internal Ex Officio Member
6.	Dr.M.Sundararaj, Professor and Head,	Internal Member
7.	Dr.C.Suresh Kumar, Associate Professor,	Internal Member
8.	Dr.D.Ravi, Associate Professor,	Internal Member
9.	Dr.Thirumavalavan, Associate Professor,	Internal Member
10.	Dr.Senthur N.S Associate Professor,	Internal Member
11.	Mr.D.Hasen, Assistant Professor,	Internal Member
12.	Mr.A.Adaikalaraj, Assistant Professor,	Internal Member
13.	Mr.M.Syedhaleem, Assistant Professor,	Internal Member
14.	Mrs.P.Divyabharathi,	Internal Member

S.24





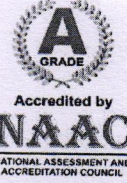


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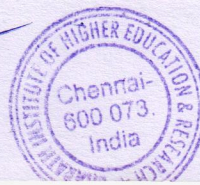
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	Assistant Professor,	
15.	Mr.Sathish Kumar K, Assistant Professor,	Internal Member
16.	Mr.N.Kalaimani, Assistant Professor,	Internal Member
17.	Mr.R.Nallapan, Assistant Professor,	Internal Member
18.	Mr.R.Karthikeyan, Assistant Professor,	Internal Member
19.	Mr.N.LeninRakesh, Assistant Professor,	Internal Member
20.	Mr.S.Manavalan, Assistant Professor,	Internal Member
21.	Mr.J.Manikandan, Assistant Professor,	Internal Member
22.	Mr.V.P.Durairaj, Assistant Professor,	Internal Member
23.	Mr.R.Sharavanan, Assistant Professor,	Internal Member
24.	Mr.S.Jeevabharathi, Assistant Professor,	Internal Member
25.	Mr.Arun.V.Rejuskumar, Assistant Professor,	Internal Member
26.	Mr.S.Karthikeyan, Assistant Professor,	Internal Member
27.	Mr.R.Arun, Assistant Professor,	Internal Member
28.	Mr.A.Sravana Kumar, Assistant Professor,	Internal Member
29.	Mr.B.Venkadesh, Assistant Professor,	Internal Member
30.	Ms.Selvakumari.G Assistant Professor,	Internal Member
31.	Mr.Prashanth R, Assistant Professor,	Internal Member
32.	Mr.Pandirajan N, Assistant Professor,	Internal Member
33.	Mr.K.Kavinkumar, Assistant Professor,	Internal Member
34.	Mr.Stephan J, Assistant Professor,	Internal Member
35.	Mr.P.Sureshkumar, Assistant Professor,	Internal Member
36.	Mr.Velayudham M, Assistant Professor,	Internal Member
37.	Mr.E.Mahavishnu, Assistant Professor,	Internal Member
38.	Mr.M.K.Karthik,	Internal Member

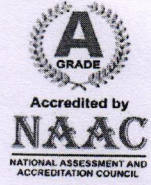
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	Assistant Professor,	
39.	Mr.V.Giridharan, Assistant Professor,	Internal Member
40.	Mr.R.Manikandan, Assistant Professor,	Internal Member
41.	Mrs.PriyaMohad, Assistant Professor,	Internal Member
42.	Mrs.S.Swetha, Assistant Professor,	Internal Member
43.	Mr.P.S.Mohanasaravanan, Assistant Professor,	Internal Member
44.	Mr.N.Elumalai, Assistant Professor,	Internal Member
45.	Mr.B.Vikram, Assistant Professor,	Internal Member
46.	Mr.T.Arul Mani, Assistant Professor,	Internal Member
47.	Mr.RamakrishnaMadhira, Assistant Professor,	Internal Member
48.	Ms.V.Jayalakshmi, Assistant Professor,	Internal Member

At the onset,

Dr.S.Elangovan, Chairman of BOS, School of Aeronautical Engineering welcomed all the members of the BOS Present and he also introduced all the members of the board.

Agenda Point No.: 1.0

Welcoming the members by the Chairman of BOS

The Chairman of BOS, Department of Aeronautical Engineering started the meeting and introduced all the members of the board.

Recommendation No.: 1.0

Mentioning of specialization in mark sheet

Dr.R.Dhanaraj, advised to reconsider printing the specialization in mark sheet.

Resolution No.: 1.0

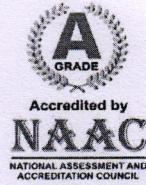
The above advice was well received and it was recommended NOT to print the specialization in the student's mark sheet.






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Agenda Point No.: 2.0

Presenting the new curricula by the Chairman of BOS

The Chairman of BOS, Department of Aeronautical Engineering, presented the new Curricula for B.Tech (AE) and B.Tech (AS) degree programs, designed based on OBE and CBCS system for Regulation 2020. After the presentation, he invited the members for their valuable comments and suggestions.

Recommendation No.: 2.1

OBE based training

Dr. Dr.K.Vijayaraja insisted on OBE based training for all faculties. He mentioned that "Introduction on OBE is missing in the presentation slide". He also added that the sustainability and the quality improvement should be portrait in the curriculum.

Resolution No.: 2.1

- OBE training was planned for all faculties
- Introduction slides on OBE system were added
- Syllabus revision flowchart (including revision schedule) was added to the presentation to showcase the quality improvement efforts

Recommendation No.: 2.2

Mandatory Courses

Dr.K.Vijayaraja insisted to provide at least minimum credit for the mandatory courses. He also insisted to include Psychology and economics in mandatory courses to refresh the student's mind and to enhance the self-learning capability of the students.

Resolution No.: 2.2

It is resolved that it is not possible to allocate credit for the mandatory courses due to limitation on the total credits provided by the AICTE guidelines.

Recommendation No.: 2.3

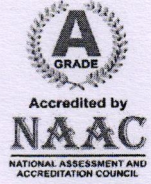
Specialization Courses






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Dr.K.Vijayaraja insisted that the students should carry out their final year project in their area of specialization.

Resolution No.: 2.3

The suggestion given by Dr.K.Vijayaraja was well considered to implement the final year project work in the specialization of the students

Recommendation No.: 2.4

Elective Courses

Dr.K.Vijayaraja suggested to include the following elective courses for Aeronautical Engineering: Renewable Energy, Cyber Infrastructure and Bio Mimics. He also suggested the following elective courses for Aerospace Engineering: Parachute Technology, Drone Technology, Meteorology and Computer Aided Inspections

Resolution No.: 2.4

The suggestion given by Dr.K.Vijayaraja was well received and resolved to be find suitable faculties to draft the syllabi of these courses and teach.

Recommendation No.: 3.1

Mandatory Courses

Mr.A.Radhakrishnan insisted to provide at least minimum credit for the mandatory courses.

Resolution No.: 3.1

It is resolved that it is not possible to allocate credit for the mandatory courses due to limitation on the total credits provided by the AICTE guidelines.

Recommendation No.: 3.2

Aircraft Propulsion

Mr.A.Radhakrishnan insisted to provide tutorial hour in the curriculum for Aircraft Propulsion course.

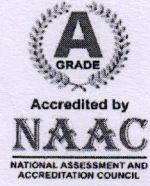
Resolution No.: 3.2

S. S. J.





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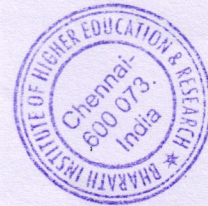
It is resolved to include 1 tutorial hour/week for this course by reducing the lecture hours to 2 hour/week.

The suggestions and comments were taken and the curriculum and syllabus were approved by the panel members and the Curriculum is attached in the annexure.

Vote of Thanks

The Dean/Academics thanked all the members for attending the meeting and their valuable suggestions.

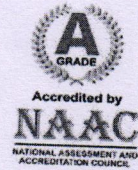
*S. S. K.*







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**ANNEXURE**  
**R2020 CURRICULUM – AERONAUTICAL ENGINEERING**

CATEGORY	COURSE CODE	COURSE NAME	L	T	P	C	PREREQUISITE
HUMANITIES AND SOCIAL SCIENCES INCLUDING MANAGEMENT COURSES	U20MBHT01	Management Principles for Engineers	3	0	0	3	Higher Secondary
	U20LEHJ01	Technical English	2	0	2	3	Higher Secondary English
	U20PDHJ01	Employability Skills and Practices	2	0	2	3	Higher Secondary English
	U20CYHT01	Social and Environmental Engineering	3	0	0	3	Higher Secondary Science
	<b>Total</b>			10	0	4	12
BASIC SCIENCE COURSES	U20PYBJ02	Mechanics and Mechanics of Solids	3	1	2	5	Higher Secondary Physics
	U20CYBJ01	Engineering Chemistry	3	1	2	5	Higher Secondary Chemistry
	U20MABT01	Calculus and Linear Algebra	3	1	0	4	Higher Secondary Mathematics
	U20MABT02	Advanced Calculus and Complex Analysis	3	1	0	4	Higher Secondary Mathematics
	U20MABT03	Transforms and Boundary Values Problems	3	1	0	4	U20MABT02-Advanced Calculus and Complex Analysis
	U20MABT04	Numerical Methods for Engineers	3	1	0	4	U20MABT03-Transforms and Boundary Values Problems

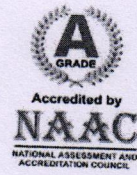
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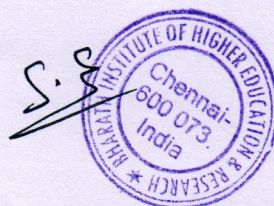


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U20MABT05	Probability and Statistics	3	1	0	4	U20MABT04- Numerical Methods for Engineers
U20BTBT01	Biology for Engineers	2	0	0	2	Higher Secondary Biology
<b>Total</b>		23	7	4	32	

<b>INERING SCIENCE COURSES</b>	U20MEEJ01	Engineering Graphics and Design	1	0	6	4	Higher Secondary
	U20EEEJ01	Basic Electrical and Electronics Engineering	3	0	2	4	Higher Secondary
	U20MEEJ02	Basic Civil and Mechanical Engineering	3	0	2	4	Higher Secondary
	U20MEET01	Engineering Mechanics	3	0	0	3	Higher Secondary
	U20CSEJ01	Programming and Problem Solving	3	0	2	4	Higher Secondary
	<b>Total</b>		13	0	12	19	
<b>PROFESSIONAL CORE COURSES (COMPULSORY COURSES)</b>	U20AECJ01	Fluid Mechanics for Aeronautical Engineers	2	0	2	3	U20MEET01- Engineering Mechanics
	U20ASCJ02	Fundamentals of Aerospace Structures	2	0	2	3	U20PYBJ02- Mechanics and Mechanics of Solids
	U20AECT01	Aero- Thermodynamics	2	1	0	3	U20CYBJ01- Engineering Chemistry
	U20ASCT04	Aerospace Materials and Process	2	0	0	2	U20CYBJ01- Engineering Chemistry U20MEEJ02 – Basic Civil and Mechanical Engineering







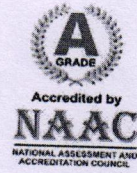
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U20AECJ02	Aircraft Systems and Instrumentation	2	0	2	3	U20EEEJ01-Basic Electrical and Electronics Engineering
U20AECJ03	Industrial Drafting	1	0	4	3	U20MEEJ01 – Engineering Graphics and Design
U20AECT02	Aviation Safety and Management	2	0	0	2	U20MBHT01 - Management Principles for Engineers
U20AECT03	Elements of Aircraft Structures	2	1	0	3	U20ASCJ02- Fundamentals of Aerospace Structures
U20AECJ04	Aerodynamics	2	0	2	3	U20AECJ01- Fluid Mechanics for Aeronautical Engineers U20BTBT01 – Biology for Engineers
U20AECJ05	Aircraft Propulsion	2	0	2	3	U20AECT01- Aero – Thermodynamics
U20AECT04	Aircraft Navigation Systems	2	0	0	2	U20AECJ02 – Aircraft Systems and Instrumentation
U20AECJ06	Airframe Repair and Maintenance	2	0	2	3	U20ASCJ02- Fundamentals of Aerospace Structures
U20AECT05	Aircraft General Engineering and Maintenance Practices	3	0	0	3	U20AECJ02 – Aircraft Systems and Instrumentation U20AECT02 – Aviation Safety and Management
U20AECT06	Flight Performance & Stability	2	1	0	3	U20AECJ04 – Aerodynamics
U20AECT07	Gas Dynamics	2	0	0	2	U20AECJ04 – Aerodynamics
U20AECJ07	Aircraft Structural	2	0	2	3	U20AECT03-Elements

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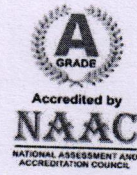
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	Mechanics					of Aircraft Structures
U20AECT08	Advanced Propulsion	3	0	0	3	U20AECJ05- Aircraft Propulsion
U20AECJ08	Aero Engine Repair and Maintenance	2	0	2	3	U20AECJ05- Aircraft Propulsion
U20AECJ09	Computational Methods in Aeronautical Engineering	1	0	2	2	U20MABT04 - Numerical methods for engineers U20AECT03 - Elements of Aircraft Structures U20AECJ04 - Aerodynamics U20AECJ05 - Aircraft Propulsion U20CSEJ01 - Programming and Problem Solving
<b>Total</b>		<b>38</b>	<b>3</b>	<b>22</b>	<b>52</b>	

SPECIALIZATION – AIR VEHICLE DESIGN AND DEVELOPMENT							
PROFESSIONAL ELECTIVE COURSES	U20AEST01	Mechanics of Machines	3	0	0	3	U20ASCJ02 – Fundamentals of Aerospace Structures
	U20AEST02	Heat Transfer	2	1	0	3	U20AECT01 - Aero – Thermodynamics
	U20AESJ02	Experimental Aerodynamics	2	0	2	3	U20AECJ04 – Aerodynamics
	U20AESJ03	Mechanics of Composites	2	0	2	3	U20ASCT04 – Aerospace Materials and Process U20AECT03 - Elements of Aircraft Structures





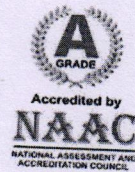


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U20AEST03	Introduction to Combustion	3	0	0	3	U20AECJ05 - Aircraft Propulsion
U20AEST08	Space Mechanics	2	11	0	3	U20AECT06 - Flight Performance & Stability
U20AEST09	Industrial Aerodynamics	3	0	0	3	U20AESJ02- Experimental Aerodynamics
U20AEST10	Flight Dynamics and Controls	2	1	0	3	U20AECT06 - Flight Performance & Stability
U20AESJ04	Introduction to CFD	2	0	2	3	U20AECT07 - Gas Dynamics U20AECJ09 Computational Methods in Aeronautical Engineering
U20AEST11	Vibrations & Aero Elasticity	2	1	0	3	U20AEST01- Mechanics of Machines U20AECJ07 - Aircraft Structural Mechanics
U20AESJ05	Experimental Stress Analysis	2	0	2	3	U20AECJ07 - Aircraft Structural Mechanics
U20AESJ06	Finite Element Methods	2	0	2	3	U20AECJ07 - Aircraft Structural Mechanics U20AESJ03 - Mechanics of Composites U20AECJ09 - Computational Methods in Aeronautical Engineering
U20AEST12	Fatigue & Fracture Mechanics	3	0	0	3	U20AECJ07- Aircraft Structural Mechanics U20ASCT04 - Aerospace Materials and Process
U20AESJ07	Computational Heat Transfer	1	0	4	3	U20AEST02- Heat Transfer U20AECJ09 - Computational Methods in





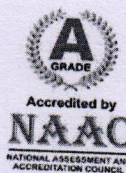


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							Aeronautical Engineering
	<b>U20AEST13</b>	Aviation Fuels and Combustion	3	0	0	3	U20AEST03- Introduction to Combustion
	<b>U20AESJ08</b>	Experimental Methods in Propulsion	2	0	2	3	U20AEST03- Introduction to Combustion
	<b>U20AEST14</b>	Rocket Propulsion	3	0	0	3	U20AECT08 - Advanced Propulsion
	<b>U20AEST22</b>	High Temperature Materials	3	0	0	3	U20AEST12 - Fatigue & Fracture Mechanics
	<b>U20AEST23</b>	Advanced Propulsion Techniques	3	0	0	3	U20AEST14 - Rocket Propulsion
	<b>U20AEST24</b>	Missile Aerodynamics	3	0	0	3	U20AESJ04- Introduction to CFD
<b>SPECIALIZATION - AIR VEHICLE PRODUCTION AND OPERATION</b>							
<b>PROFESSIONAL ELECTIVE COURSES</b>	<b>U20AESJ01</b>	Non-Technical Software for Engineers	2	0	2	3	U20AECJ03 - Industrial Drafting
	<b>U20AEST04</b>	Writing Practices for Technical Manuals	2	1	0	3	U20AESJ01 - Non-Technical Software for Engineers
	<b>U20AEST05</b>	Additive Manufacturing and Prototyping	3	0	0	3	U20ASCT04 - Aerospace Materials and Process U20AESJ01 - Non-Technical Software for Engineers
	<b>U20AEST06</b>	Aircraft Electrical Systems	3	0	0	3	U20AECT04 - Aircraft Navigation Systems
	<b>U20AEST07</b>	Civil Aviation Requirement	3	0	0	3	U20AECT05 - Aircraft General Engineering and Maintenance Practices





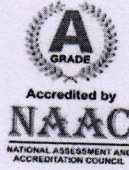


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	U20AEST15	Aircraft Systems and Maintenance	3	0	0	3	U20AECJ06 – Airframe Repair and Maintenance U20AECJ08 - Aero Engine Repair and Maintenance
	U20AEST16	Optimization Techniques	3	0	0	3	U20MABT05 – Probability and Statistics
	U20AEST17	Product Design and Management	3	0	0	3	U20AEST04 – Writing Practices for Technical Manuals U20AEST05 - Additive Manufacturing and Prototyping
	U20AESJ09	Non-Destructive Testing & Evaluation	2	0	2	3	U20AEST06 – Aircraft Electrical Systems
	U20AEST18	Airport Engineering	3	0	0	3	U20AEST07 – Civil Aviation Requirement
	U20AEST19	Helicopter Maintenance	3	0	0	3	U20AECT15 – Aircraft Systems and Maintenance
	U20AEST20	Operations Research	3	0	0	3	U20AEST16 – Optimization Techniques
	U20AEST21	Entrepreneurship for Aero Engineers	3	0	0	3	U20AEST17 – Product Design and Management
PROJECT WORK, SEMINAR,	U20AEPL01	Airplane Design - I	0	0	2	1	U20AECT06– Flight Performance & Stability
	U20AEPL02	Airplane Design - II	0	0	2	1	U20AEPL01 - Airplane Design - I







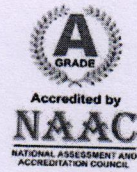
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### BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY

#### SCHOOL OF AERONAUTICAL ENGINEERING



	U20AEPL03	Project Phase – I	0	0	4	2	U20LEHJ01 – Technical English U20PDHJ01 – Employability Skills and Practices U20CYHT01 – Social and Environmental Engineering All Professional Core
	U20AEPL04	Project Phase - II	0	0	20	10	U20AEPL03- Project Phase - I
	U20AEPI01	Internship	0	0	0	1	U20LEHJ01 – Technical English U20PDHJ01 – Employability Skills and Practices U20CYHT01 – Social and Environmental Engineering All Professional Core
	<b>Total</b>		0	0	28	15	
<b>OPEN ELECTIVE COURSES</b>	U20AEOT01	Elements of Aeronautics and Astronautics	3	0	0	3	Nil
	U20AEOT02	Wind Tunnel Testing, Instrumentation & Measurements	3	0	0	3	Nil
	U20AEOT03	Introduction to Composite Materials	3	0	0	3	Nil
	U20AEOT04	Elements of Jet Propulsion Systems	3	0	0	3	Nil
<b>MA NDA TOR</b>	U20LEMT01	Constitution of India				0	Nil







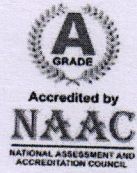
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### BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY

#### SCHOOL OF AERONAUTICAL ENGINEERING



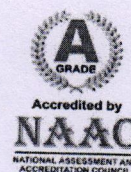
U20LEMT02	Value Education				0	Nil
U20LEMT03	Physical and Mental Health using Yoga				0	Nil
U20LEMT04	Indian Knowledge Tradition				0	Nil
U20LEMT05	Competencies in Social Skills				0	Nil







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**BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF AERONAUTICAL ENGINEERING**



**R2020 CURRICULUM – AEROSPACE ENGINEERING**

CATEGORY	COURSE CODE	COURSE NAME	L	T	P	C	PREREQUISITE
HUMANITIES AND SOCIAL SCIENCES INCLUDING MANAGEMENT COURSES	U20MBHT01	Management Principles for Engineers	3	0	0	3	Higher Secondary
	U20LEHJ01	Technical English	2	0	2	3	Higher Secondary English
	U20PDHJ01	Employability Skills and Practices	2	0	2	3	Higher Secondary English
	U20CYHT01	Social and Environmental Engineering	3	0	0	3	Higher Secondary Science
	<b>Total</b>			10	0	4	12
BASIC SCIENCE COURSES	U20PYBJ02	Mechanics and Mechanics of Solids	3	1	2	5	Higher Secondary Physics
	U20CYBJ01	Engineering Chemistry	3	1	2	5	Higher Secondary Chemistry
	U20MABT01	Calculus and Linear Algebra	3	1	0	4	Higher Secondary Mathematics
	U20MABT02	Advanced Calculus and Complex Analysis	3	1	0	4	Higher Secondary Mathematics
	U20MABT03	Transforms and Boundary Values Problems	3	1	0	4	U20MABT02- Advanced Calculus and Complex Analysis
	U20MABT04	Numerical Methods for Engineers	3	1	0	4	U20MABT03- Transforms and Boundary Values Problems





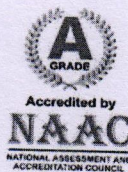


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U20MABT05	Probability and Statistics	3	1	0	4	U20MABT04- Numerical Methods for Engineers
U20BTBT01	Biology for Engineers	2	0	0	2	Higher Secondary Biology
<b>Total</b>		23	7	4	32	

ENGINEERING SCIENCE COURSES	U20MEEJ01	Engineering Graphics and Design	1	0	6	4	Higher Secondary
	U20EEEJ01	Basic Electrical and Electronics Engineering	3	0	2	4	Higher Secondary
	U20MEEJ02	Basic Civil and Mechanical Engineering	3	0	2	4	Higher Secondary
	U20MEET01	Engineering Mechanics	3	0	0	3	Higher Secondary
	U20CSEJ01	Programming and Problem Solving	3	0	2	4	Higher Secondary
	<b>Total</b>		13	0	12	19	
PROFESSIONAL CORE COURSES (COMPULSORY COURSES)	U20ASCT01	Introduction to Space Science & Applications	2	0	0	2	Higher Secondary
	U20ASCJ01	Fluid Mechanics for Aerospace Engineers	2	0	2	3	U20MEET01- Engineering Mechanics
	U20ASCJ02	Fundamentals of Aerospace Structures	2	0	2	3	U20PYBJ02-Mechanics and Mechanics of Solids
	U20ASCT02	Fundamentals of Thermal Engineering	2	1	0	3	U20CYBJ01- Engineering Chemistry U20MEEJ02 – Basic Civil and Mechanical Engineering

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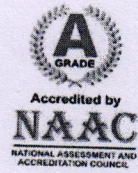
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## INSTITUTE OF HIGHER EDUCATION AND RESEARCH

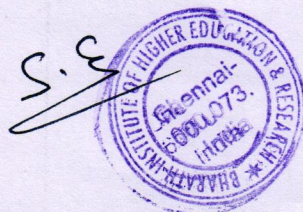
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U20ASCT03	Applied Dynamics and Vibrations	2	1	0	3	U20MEET01- Engineering Mechanics
U20ASCT04	Aerospace Materials and Process	2	0	0	2	U20CYBJ01- Engineering Chemistry U20MEEJ02 – Basic Civil and Mechanical Engineering
U20ASCT05	Spacecraft Instrumentation	2	0	0	2	U20EEEJ01-Basic Electrical and Electronics Engineering
U20ASCT06	Spacecraft Communication	2	0	0	2	U20MABT02- Advanced Calculus and Complex analysis U20EEEJ01- Basic Electrical and Electronics Engineering
U20ASCJ03	Low and High Speed Aerodynamics	3	0	2	4	U20ASCJ01- Fluid Mechanics for Aerospace Engineers U20BTBT01 – Biology for Engineers
U20ASCJ04	Advanced Aerospace Structures	3	0	2	4	U20ASCJ02- Fundamentals of Aerospace Structures
U20ASCJ05	Aerospace Propulsion	2	0	2	3	U20ASCT02- Fundamentals of Thermal Engineering
U20ASCT07	Control Theory	3	0	0	3	U20MABT03- Transforms and Boundary Values Problems U20EEEJ01-







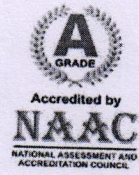
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#### SCHOOL OF AERONAUTICAL ENGINEERING



						Basic Electrical and Electronics Engineering
U20ASCT08	Orbital Mechanics	2	1	0	3	U20ASCT01- Introduction to Space Science & Applications U20ASCT03- Applied Dynamics and Vibrations
U20ASCJ06	Avionics	2	0	2	3	U20ASCT05- Spacecraft Instrumentation
U20ASCT09	Spacecraft Propulsion	3	0	0	3	U20ASCJ05- Aerospace Propulsion
U20ASCT10	Flight Mechanics	2	0	0	2	U20ASCJ03- Low and High speed Aerodynamics
U20ASCT11	Navigation and Guidance	2	0	0	2	U20ASCT07- Control Theory
U20ASCT12	Satellite Technology	3	0	0	3	U20ASCJ06- Avionics
U20ASCJ07	Computational Methods in Aerospace Engineering	1	0	2	2	U20MEEJ01 - Engineering Graphics and Design U20MABT04 Numerical Methods for Engineers U20ASCJ03- Low and High speed Aerodynamics

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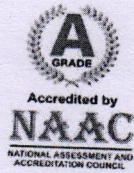


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						U20ASCJ04- Advanced Aerospace Structures  U20ASCJ05- Aerospace Propulsion
<b>Total</b>		42	3	14	<b>52</b>	

### SPECIALIZATION – SPACECRAFT DESIGN AND DEVELOPMENT

PROFESSIONAL ELECTIVE COURSES	U20ASST01	Boundary Layer Theory	3	0	0	3	U20ASCJ03- Low and High speed Aerodynamics
	U20ASSJ02	Experimental Techniques in Fluid Mechanics	2	0	2	3	U20ASCJ03- Low and High speed Aerodynamics
	U20ASST02	Theory of Elasticity	2	1	0	3	U20ASCJ04- Advanced Aerospace Structures
	U20ASSJ03	Mechanics of Composite Materials	2	0	2	3	U20ASCT04-Aerospace Materials and Process  U20ASCJ04- Advanced Aerospace Structures
	U20ASST03	Heat Transfer for Aerospace Engineers	2	1	0	3	U20ASCJ05- Aerospace Propulsion
	U20ASST05	Fundamental of Combustion	3	0	0	3	U20ASCJ05- Aerospace Propulsion
	U20ASST06	Applied Aerodynamics	3	0	0	3	U20ASSJ02- Experimental Techniques in Aerodynamics

5.3



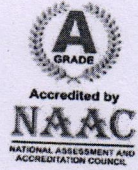


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U20ASSJ04	CFD for Aerospace Engineers	2	0	2	3	U20ASCJ07- Computational Methods in Aerospace Engineering
U20ASST07	Plates and Shells	2	1	0	3	U20ASST02- Theory of Elasticity
U20ASSJ05	Experimental Techniques in Structural Mechanics	2	0	2	3	U20ASST02- Theory of Elasticity
U20ASST08	Mechanics of Fatigue and Fracture	3	0	0	3	U20ASCT04-Aerospace Materials and Process U20ASST02- Theory of Elasticity
U20ASSJ08	FEM in Aerospace Structures	2	0	2	3	U20ASSJ03-Mechanics of Composite Materials  U20ASCJ07- Computational Methods in Aerospace Engineering
U20ASST14	Propellant Manufacturing Technology	2	1	0	3	U20ASCT09-Spacecraft Propulsion
U20ASSJ09	Experimental Techniques in Propulsion	2	0	2	3	U20ASST05- Fundamental of Combustion
U20ASST15	Cryogenics Technology	3	0	0	3	U20ASCT09-Spacecraft Propulsion
U20ASSJ10	Numerical Heat Transfer	2	0	2	3	U20ASST03-Heat Transfer for Aerospace Engineers U20ASCJ07- Computational Methods in Aerospace Engineering



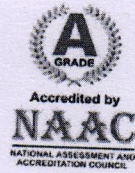




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	<b>U20ASST16</b>	High Temperature Gas Dynamics	3	0	0	3	U20ASST01-Boundary Layer Theory U20ASSJ04- CFD for Aerospace Engineers
	<b>U20ASST17</b>	Space Vehicle Aerodynamics	3	0	0	3	U20ASSJ04- CFD for Aerospace Engineers
	<b>U20ASST18</b>	Design of LTA Systems	3	0	0	3	U20ASSJ04- CFD for Aerospace Engineers
	<b>U20ASST19</b>	Aeroelasticity	2	1	0	3	U20ASCT03 – Applied Dynamics and Vibrations U20ASSJ08- FEM in Aerospace Structures
	<b>U20ASST20</b>	Materials for High Temperature Applications	3	0	0	3	U20ASST08- Mechanics of Fatigue and Fracture
	<b>U20ASST21</b>	Advances in Aerospace Propulsion Techniques	3	0	0	3	U20ASST14-Propellant Manufacturing Technology
<b>SPECIALIZATION – SPACE MECHANICS AND CONTROLS</b>							
<b>PROFESSIONAL ELECTIVE COURSES</b>	<b>U20ASSJ01</b>	Introduction to Automation	2	0	2	3	U20ASCJ06-Avionics
	<b>U20ASST04</b>	UAV Dynamics and Controls	3	0	0	3	U20ASCT07- Control Theory
	<b>U20ASST09</b>	Aircraft Dynamics and Controls	2	1	0	3	U20ASCT10-Flight Mechanics
	<b>U20ASSJ06</b>	Feedback Control Systems	2	0	2	3	U20ASCT07- Control Theory U20ASSJ01- Introduction to Automation





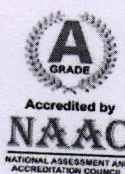


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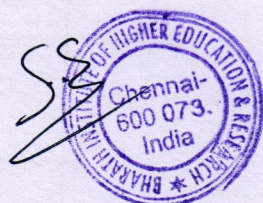
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U20ASSJ07	Flight Testing	2	0	2	3	U20ASCT10-Flight Mechanics
U20ASST10	Guidance Theory	3	0	0	3	U20ASCT11- Navigation and Guidance
U20ASST11	Cooperative Control of Dynamical Systems	3	0	0	3	U20ASST18-UAV Dynamics and Control
U20ASST12	Satellite Communication and Navigation	3	0	0	3	U20ASCT06- Spacecraft Communication U20ASCT12-Satellite Technology
U20ASSJ11	Drone Programming	2	0	2	3	U20ASST04-UAV Dynamics and Controls
U20ASST13	Optimization Techniques	3	0	0	3	U20MABT05- Probability and Statistics
U20ASST22	Astrodynamics	3	0	0	3	U20ASCT08-Orbital Mechanics U20ASST09-Aircraft Dynamics and Controls
U20ASST23	Spacecraft Control & Simulation	3	0	0	3	U20ASSJ06-Feedback Control Systems
U20ASST24	Guidance & Control for Aerospace Vehicles	3	0	0	3	U20ASST10- Guidance Theory
U20ASST25	Spacecraft Dynamics	3	0	0	3	U20ASST09-Aircraft Dynamics and Controls
U20ASST26	Space Mission Design and Optimization	3	0	0	3	U20ASST13- Optimization Techniques





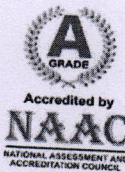


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PROJECT WORK, SEMINAR, AND INTERNSHIP IN INDUSTRY OR HIGHER INSTITUTIONS

U20ASPL01	UAV Design	0	0	2	1	U20MBHT01 – Management Principles for Engineers  U20LEHJ01 – Technical English  U20PDHJ01 – Employability Skills and Practices  U20CYHT01 – Social and Environmental
U20ASPL02	Satellite Design	0	0	2	1	U20ASPL01  UAV Design
U20ASPL03	Project Phase-1	0	0	4	2	U20MBHT01 – Management Principles for Engineers  U20LEHJ01 – Technical English  U20PDHJ01 – Employability Skills and Practices  U20CYHT01 – Social and Environmental
U20ASPL04	Project Phase-2	0	0	20	10	U20ASPL03

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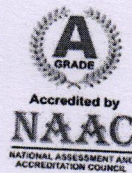


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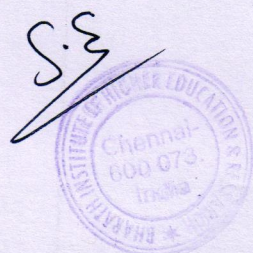
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	U20ASPI01	Internship	0	0	0	1	U20MBHT01 – Management Principles for Engineers U20LEHJ01 – Technical English U20PDHJ01 – Employability Skills and Practices U20CYHT01 – Social and Environmental
	<b>Total</b>		0	0	28	15	
<b>OPEN ELECTIVE COURSES</b>	U20AEOT01	Elements of Aeronautics & Astronautics	3	0	0	3	Nil
	U20AEOT02	Wind Tunnel Testing, Instrumentation & Measurements	3	0	0	3	Nil
	U20AEOT03	Introduction to Composite Materials	3	0	0	3	Nil
	U20AEOT04	Elements of Jet Propulsion systems	3	0	0	3	Nil
<b>MANDATORY COURSES (NON-CREDIT)</b>	U20LEMT01	Constitution of India				0	Nil
	U20LEMT02	Value Education				0	Nil
	U20LEMT03	Physical and Mental Health using Yoga				0	Nil
	U20LEMT04	Indian Knowledge Tradition				0	Nil
	U20LEMT05	Competencies in Social Skills				0	Nil





## Attendance Sheet

### Meeting Summary

Total Number of Participants: 48  
 Meeting Title: Board of studies  
 Meeting Start Time: 4/7/2020, 09:50:16 AM  
 Meeting End Time: 4/7/2020, 12:43:33 PM  
 Meeting Id: cc322a54-a950-4398-abde-36924182acf45

Full Name	Join Time	Leave Time	Email	Role
Dr.S.Elangovan	4/7/2020, 9:50:16 AM	4/7/2022, 12:43:33 PM	elangovan.aero@bharathuniv.ac.in	Organizer
Dr.K.Vijayaraja	4/7/2020, 9:52:16 AM	4/7/2020, 12:30:16 PM	Guest	Attendee
R.Dhanaraj	4/7/2020, 9:55:25 AM	4/7/2020, 12:31:21 PM	Guest	Attendee
A.Radhakrishnan	4/7/2020, 9:55:50 AM	4/7/2020, 12:31:32 PM	Guest	Attendee
Dr.J.Hameed Hussian	4/7/2020, 9:52:06 AM	4/7/2020, 12:31:40 PM	deanengineering@bharathiniv.ac.in	Attendee
Dr.M.Sundararaj	4/7/2020, 9:52:48 AM	4/7/2020, 12:31:41 PM	hodaero@bharathuniv.ac.in	Attendee
C.Suresh Kumar	4/7/2020, 9:55:48 AM	4/7/2020, 12:31:45 PM	sureshkumar.aero@bharathuniv.ac.in	Attendee
D.Ravi	4/7/2020, 10:00:16 AM	4/7/2020, 12:31:52 PM	ravi.aero@bharathuniv.ac.in	Attendee
Thirumavalavan	4/7/2020, 10:01:35 AM	4/7/2020, 12:41:02 PM	thirumavalavan.aero@bharathuniv.ac.in	Attendee
Senthur N.S	4/7/2020, 10:01:48 AM	4/7/2020, 12:32:16 PM	senthur.aero@bharathuniv.ac.in	Attendee
D.Hasen	4/7/2020, 10:01:50 AM	4/7/2020, 12:31:24 PM	hasen.aero@bharathuniv.ac.in	Attendee
A.Adaikalaraj	4/7/2020, 10:01:55 AM	4/7/2020, 12:34:16 PM	adaikalaraj.aero@bharathuniv.ac.in	Attendee
M.Syedhaleem	4/7/2020, 10:05:55 AM	4/7/2020, 12:38:54 PM	syedhaleem.aero@bharathuniv.ac.in	Attendee
P.Divyaabharathi	4/7/2020, 10:08:27 AM	4/7/2020, 12:33:46 PM	divyaabharathi.aero@bharathuniv.ac.in	Attendee
Sathish Kumar K	4/7/2020, 10:09:47 AM	4/7/2020, 12:35:18 PM	sathishkumar.aero@bharathuniv.ac.in	Attendee
N.Kalaimani	4/7/2020, 10:11:18 AM	4/7/2020, 12:32:36 PM	kalaimani.aero@bharathuniv.ac.in	Attendee
R.Nallapan	4/7/2020, 10:11:58 AM	4/7/2020, 12:32:16 PM	nallapan.aero@bharathuniv.ac.in	Attendee
R.Karthikeyan	4/7/2020, 10:12:19 AM	4/7/2020, 12:33:56 PM	karthikeyan.aero@bharathuniv.ac.in	Attendee
N.Lenin Rakesh	4/7/2020, 10:12:30 AM	4/7/2020, 12:34:23 PM	leninrakesh.aero@bharathuniv.ac.in	Attendee
S.Manavalan	4/7/2020, 10:12:42 AM	4/7/2020, 12:40:16 PM	manavalan.aero@bharathuniv.ac.in	Attendee
J.Manikandan	4/7/2020, 10:13:02 AM	4/7/2020, 12:42:22 PM	manikandanj.aero@bharathuniv.ac.in	Attendee
V.P.Durairaj	4/7/2020, 10:13:52 AM	4/7/2020, 12:30:48 PM	durairaj.aero@bharathuniv.ac.in	Attendee
R.Sharavanan	4/7/2020, 10:15:48 AM	4/7/2020, 12:30:26 PM	shravanan.aero@bharathuniv.ac.in	Attendee
S.Jeevabharathi	4/7/2020, 10:16:02 AM	4/7/2020, 12:35:54 PM	jeevabharathi.aero@bharathuniv.ac.in	Attendee





Arun.V.Rejuskumar	4/7/2020, 10:18:02 AM	4/7/2020, 12:30:44 PM	arunvrejuskumar.aero@bharathuniv.ac.in	Attendee
S.Karthikeyan	4/7/2020, 10:19:25 AM	4/7/2020, 12:34:45 PM	kartikeyans.aero@bharathuniv.ac.in	Attendee
R.Arun	4/7/2020, 10:20:18 AM	4/7/2020, 12:30:16 PM	arun.aero@bharathuniv.ac.in	Attendee
A.Sravana Kumar	4/7/2020, 10:21:47 AM	4/7/2020, 12:32:19 PM	sravanakumar.aero@bharathuniva.ac.in	Attendee
B.Venkadesh	4/7/2020, 10:22:17 AM	4/7/2020, 12:33:16 PM	vekadesh.aero@bharathuniv.ac.in	Attendee
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Prashanth R	4/7/2020, 10:23:17 AM	4/7/2020, 12:40:16 PM	prashanth.aero@bharathuniv.ac.in	Attendee
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Arul Mani	4/7/2020, 10:28:15 AM	4/7/2020, 12:37:25 PM	arulmani.aero@bharathuniv.ac.in	Attendee
RamakrishnaMadhira	4/7/2020, 10:28:35 AM	4/7/2020, 12:35:45 PM	ramakrishnamadhira.aero@bharathuniv.ac.	Attendee
V.Jayalakshmi	4/7/2020, 10:28:52AM	4/7/2020, 12:40:16 PM	jayalakshmi.aero@bharathuniv.ac.in	Attendee

