



Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH

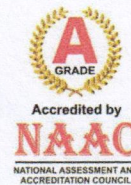
(Declared as Deemed-to-be University under section 3 of UGC Act, 1956)

(Vide Notification No. F.9-5/2000 - U.3, Ministry of Human Resource Development, Govt. of India, dated 4th July 2002)

BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY

SCHOOL OF AERONAUTICAL ENGINEERING

Website : www.bharathuniv.ac.in



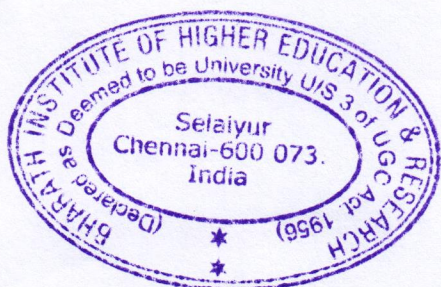
Vision and Mission of The Institute

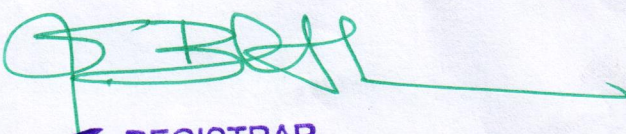
Vision

“Bharath Institute of Higher Education & Research (BIHER) envisions and constantly strives to provide an excellent academic and research ambience for students and members of the faculties to inherit professional competence along with human dignity and transformation of community to keep pace with the global challenges so as to achieve holistic development.”

Mission

- To develop as a Premier University for Teaching, Learning, Research and Innovation on par with leading global universities.
- To impart education and training to students for creating a better society with ethics and morals.
- To foster an interdisciplinary approach in education, research and innovation by supporting lifelong professional development, enriching knowledge banks through scientific research, promoting best practices and innovation, industry driven and institute oriented cooperation, globalization and international initiatives.
- To develop as a multi-dimensional institution contributing immensely to the cause of societal advancement through spread of literacy, an ambience that provides the best of international exposures, provide health care, enrich rural development and most importantly impart value based education.
- To establish benchmark standards in professional practice in the fields of innovative and emerging areas in engineering, management, medicine, dentistry, nursing, physiotherapy and allied sciences.
- To imbibe human dignity and values through personality development and social service activities.




REGISTRAR
BHARATH INSTITUTE OF HIGHER EDUCATION & RESEARCH
(Declared as Deemed to be University U/S 3 of UGC Act, 1956)
Selaiyur, Chennai-600 073. India



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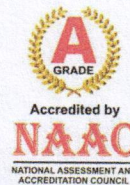
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Vision and Mission of The School

Vision

Department of Aeronautical Engineering will endeavor to accomplish worldwide recognition with a focal point of Excellence in the field of Aeronautics by providing quality Education through world class facilities, enabling graduates turning out to be Professional Experts with specific knowledge in Aeronautical & Aerospace engineering.

Mission

- To be the state of art Teaching and Learning center with excellent infrastructure and empowered Faculties in Aeronautical & Aerospace Engineering.
- To foster a culture of innovation among students in the field of Aeronautics and Aerospace with updated professional skills to enhance research potential for sponsored research and innovative projects.
- To Nurture young individuals to be knowledgeable, skilful, and ethical professionals in their pursuit of Aeronautical & Aerospace Engineering.



M. S. S. S.
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School of Aeronautical Engineering
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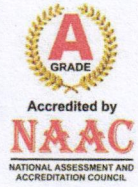
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B.Tech- Aerospace Engineering

Program Educational Objectives Statements (PEO)

PEO 1: Demonstrate a solid grasp of fundamental concepts in Mathematics, Science, and Engineering, essential for effectively addressing engineering challenges within the Aerospace industry.

PEO 2: Involve in process of designing, simulating, fabricating, testing, and evaluating in the field of Aerospace.

PEO 3: Obtain advanced skills to actively engage in research and development endeavors within emerging domains, while also pursuing further education opportunities.

PEO 4: Demonstrate efficient performance both as independent contributors and as valuable team members in diverse multidisciplinary projects.

PEO 5: Embrace lifelong learning and career advancement while adapting to the evolving social demands and needs.



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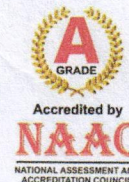
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Program Outcomes (PO's)

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

PO2: Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.

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

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

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

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

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the





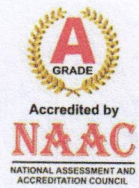
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knowledge of, and need for sustainable development.

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

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

PO10: Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations and give and receive clear instructions.

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

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



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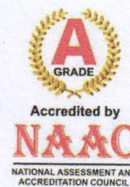
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B.Tech- Aerospace Engineering

Program Specific Outcomes (PSO) - R2018

PSO1: Create, Select, and Apply aerospace modelling, analysis, and design, as well as team working skills in the design and integration of Spacecraft systems.

PSO2: Apply principles of aerodynamics, space propulsion, aerospace structures and control systems to design and analyze aircraft and spacecraft with desired performance characteristics.

Program Specific Outcomes (PSO) - R2020

PSO1: Design and analyze aerospace components/systems for aerospace industries.

PSO2: Acquire the concepts of spacecraft attitude dynamics for the prediction of spacecraft motion.



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B.Tech Aerospace Engineering

PO, PSO Articulation Matrix R 2018

Course Code	Course Name	Program Outcome Attainment													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
U18BSMA302	Partial Differential Equations, Probability and Statistics	3	3	2	2	1							2		
U18PCAS301	Introduction to Aerospace Engineering	3				2					2		3		3
U18PCAS302	Applied Dynamics and Vibration	3				3					3				3
U18ESAS301	Fundamentals of Fluid Mechanics	3									3		1		3
U18ESAS302	Fundamentals of Aero – Thermodynamics	3									3		3		3
U18ESAS303	Fundamentals of Structural Mechanics	3				3					3		2		3
U18PCAS3L1	Strength of Materials Laboratory	3								3	3				3
U18PCAS3L2	Computer Aided Design and Drafting Laboratory	3	3							3	3			3	3
U18ESAS3L1	Fluid Mechanics and Machinery Laboratory	3								3	3				3
U18BSMA401	Numerical Methods	3	3	2		2							2		
U18PCAS401	Elements of Aerospace Structures	3									2		3		3
U18PCAS402	Aerodynamics	3				1					2		2		3
U18PCAS403	Air breathing Propulsion	3									2		3	3	3
U18PCAS404	Aerospace Materials	3						2			3				3
U18PCAS405	Manufacturing Technology	3									1	1			
U18PCAS4L1	Aerodynamics Laboratory	3								3	3				3
U18PCAS4L2	Manufacturing Technology Laboratory	3								3	3		3		

U18PCAS501	Aerospace Structural Mechanics	3								3				3
U18PCAS502	Compressible Flow	3		1		2				1		3		3
U18PCAS503	Rocket Propulsion	3								3				3
U18PCAS504	Aircraft Performance	3								2				3
U18PCAS505	Aircraft Stability and Control	3								2				2
U18PCAS5L1	Aircraft Structures Laboratory	3							3	3				3
U18PCAS5L2	Gas Dynamics Laboratory	3				3				2	2			3
U18PCAS5L3	Flight Simulation Laboratory												1	1
U18HSBA60 1	Organizational Behavior for Engineers					3	3	3						
U18PCAS601	Finite Element Analysis	3				1				2		2		3
U18PCAS602	Heat Transfer	1	3	2	1	3	1						2	
U18PCAS6L1	Computer Aided Analysis Laboratory	3		1		3				3	3		3	3
U18PCAS6L2	Propulsion Laboratory	3								3	3		2	2
U18EEAS6L1	Aircraft Design Project	3	3	3		1				3	3		3	3
U18PCAS701	Guidance and Control	3	1	1		2	1			2			3	3
U18PCAS702	Satellite Technology	3								3			3	
U18PCAS7L1	Satellite Design Laboratory	3				3				3			3	
U18PRAS7P1	Project Phase I	3	3	3	3	3	3		3	3	3	3	3	3
U18PRAS8P2	Project Phase II	3	3	3	3	3	3		3	3	3	3	3	3
U18PRAS8C 1	Comprehension	3								3	2			