Bridging The Gap Between Students and **Evolving Global Economy** by Imparting Quality Education and **Fostering Future Innovators** and Leaders

Ranked **65** amongst **Top Management** Institutions of India*	Ranked **62** amongst **Top Engineering** Institutions of India*	Ranked **55** amongst **Top Universities** of India*		* Source: NIRF 2023 Ranking Ministry of Education Govt. of India
Band 'Excellent' under the category "University & Deemed to be University (Private/Self Financed) (Technical)"	**QS-i-GAUGE** Platinum Subject Rating in Engineering & Diamond Rating in overall University Category	**NBA** Approved Academic Programs Biotechnology, CSE, ECE, ME , CE , MBA & EE	**NAAC 'A+'** NAAC Accredited	**AICTE** Approved Academic Programs

"Source: Atal Ranking of Institutions on Innovation Achievements (ARIIA), 2022, MHRD'S Innovation Cell, AICTE, Govt. of India

Ranked amongst **TOP 601-800 Universities of the World#**	**10th Rank** amongst Top Universities of India* (Both Government & Private)	**1st Rank** amongst all Universities of Uttarakhand* (Both Government & Private)	#Source: Times Higher Education World University Ranking 2023

Distinguished Faculties

Dr. Ajay Gairola - JSPS Fellow
(PhD - Computational Wind Engineering) IIT Roorkee
Areas of specialisation: Computational Fluid Dynamics, Computational Wind Engineering

Prof. Dr. Pravin P. Patil
(PhD IIT Roorkee)
Area of specialisations: Finite Element Method in Aerospace

Dr. Sudhir Joshi
(PhD Aerospace Engineering)
Areas of specialisation: High Speed Aerodynamics, flight Mechanics, Aircraft Maintenance and overhaul practices

Dr. Pushpendra Kumar
(Postdoc & PhD University of Lille , France)
Areas of specialisation: Dynamics and Control, UAV

Dr. Ritvik Dobriyal
(PhD NTU SINGAPORE)
Area of specialisations: Flight Dynamics and control

Dr. Rajesh P. Verma
(PhD NIT Allahabad, INDIA)
Area of specialisations: Fabrication of light metal alloys, Aerostructure, Fatigue and fracture analysis

Prof. Punit Gupta
(M.Tech IISc Bangalore)
Areas of specialisation: Moedlling and Simulaton , CFD, AIML for Engineering Application

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AEROSPACE ENGINEERING

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About the Program

B.Tech in Aerospace Engineering is a four-year undergraduate program that deals with the design, manufacture, testing, maintenance, and science of aircraft, spacecraft, and related systems & equipment. B.Tech in Aerospace Engineering at Graphic Era University has been conceived and designed in consultation with industries as well as academic experts to nurture the world class engineers in the area of Aerospace Engineering.

The graduates of B.Tech in Aerospace Engineering will gain expertise in the area of aerodynamics, propulsion, structures, avionics, flight mechanics, space dynamics, aircraft design, aircraft manufacturing technology, launch vehicles, space craft, guidance & navigation, Dynamics and Control and UAV's. Students also learn about fundamental engineering subjects which are pre-requisites to Aerospace engineering viz., engineering mechanics, strength of material, fluid mechanics, basic and applied thermodynamics, electronic systems, basic computational methods, engineering graphics and Computer-Aided Engineering and more.

LEARN FROM THE EXPERTS

The Department boasts a team of well-qualified faculty from leading universities across the globe including IITs, NITs, IISC and more. The academics have gained immense recognition and experience in teaching as well as research.

A PERFECT BLEND OF THEORY & PRACTICE

The department conducts workshops, knowledge camps, conferences, seminars, guest lectures and industrial tours round the year to ensure a thorough understanding of the discipline & groom students into career-ready graduates.

TRANSFORM THROUGH EXPERIENCE

Students at Graphic Era Deemed to-be University have ease of access to five Centres of Excellence Labs instituted within the campus with support and collaboration from TATA Technologies Limited, Pune.

State of the Art Facility - Turbulent Wind Tunnel

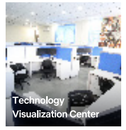
The pilot project to develop an energy efficient 'Turbulent Wind Tunnel' has been successfully completed at Graphic Era (Deemed to be) University, Dehradun, Uttarakhand. The state-of-the-art machine can generate a maximum speed of 40 m/sec at a rotational speed of 8000 rpm. The Velocity history of random fluctuating flow can be reproduced with high accuracy in a 3D multiple fan wind tunnel. The air flows can be generated by 12 frequency controlled fans arranged individually in a 3 wide by 4 high Matrix. Notably, the advanced machine can be used as a conventional type Open Circuit Wind Tunnel as well.

Notably, the project was first-of-its-kind in India and was carried out by an exceptional team of researchers namely. Dr. Ajay Gairola –Professor Civil Engineering Graphic Era (Deemed to be) University and Former Prof. & Head, Centre of Excellence in Disaster Mitigation & Management (IIT Rorkee), Sidhartha Jena, Research Scholar, Wind Engineering, Department of Civil Engineering, Graphic Era (Deemed to be) University.


Aerodynamics Lab


Aero Space Advance Manufacturing Lab

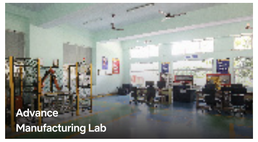

Aero Fluid Mechanics Lab


Technology Visualization Center


Aero Modelling and Fabrication Lab


Material Testing Lab


Material Testing Lab


Advance Manufacturing Lab

Curriculum Module

Aerodynamics, Flight Mechanics, Aircraft Stability and Control, Space Dynamics, Aerospace Propulsion, Structures of Aerospace Vehicle, Rocket Propulsion, Aircraft Instrumentation and Control, Supersonic Aerodynamics, Navigation Guidance and control, Orbital Mechanics, Composite Material, Fatigue and Fracture Mechanics, Elements of Hypersonic Vehicle. Helicopter Aerodynamics, Wind Tunnel Techniques, Aircraft Legislation, Aircraft Maintenance and Overhaul Practices, Design of Aerospace Vehicle

Aerospace Laboratory

Aerodynamics Laboratory, Aircraft Propulsion Laboratory, Aircraft Structural Laboratory, Aeromodelling and Fabrication Lab, Computational Fluid Dynamics Laboratory, Python Programming Laboratory, Instrumentation and Control Laboratory, MATLAB for Engineers, Advance MATLAB for Aerospace Engineers and more.

Career Opportunities

The launch of UDAN-RCS (a regional airport development and regional connectivity scheme of Government of India) has given an exponential boost to the demand for aerospace engineers at national level. Along with this, the commercialization of space shuttles and rockets (SPACE X, Blue Origin, Virgin Galactic) and entry of private players (like TATA, Mahindra Aerospace, Agnikul Cosmos, Bellatrix Aerospace, Skyroot Aerospace, Reliance Aerospace, Godrej Aerospace and more) in the aerospace technology sector has also improved their prospects by manifolds.

As far as career growth is concerned, aeronautical engineering is one of the top options in terms of Return on Investment. The stream offers a stable career, excellent remuneration and a future-proof career option for students.

Career Paths:

Design and Development
ISRO, NAL, DRDO , HAL, Airbus, Boeing, Rolls Royce, GE, United Technologies

Engineering Services:
All Airlines , CYIENT, TCS, Quest Global, Honeywell

Manufacturing:
HAL, Mahindra Aerospace, TATA Advance System

Field Services:
Honeywell, All Airlines

Management:
Quality Management in Aerospace Standard – All organizations.

Special Offerings

The students will be provided opportunities to train and complete projects with reputed public and private aircraft/systems manufacturing organizations.

Considering the industrial and research demands, the program also covers computational fluid dynamics in aerospace engineering, airport and airline management, aircraft design, flight dynamics etc.

Students will be exposed to latest trends in Aerospace Engineering through expert lectures/webinars from world renowned aerospace scientists of NASA, ISRO, DRDO, HAL and more.

Continuous knowledge enrichment of students will be ensured through various certification programs – Aerospace Quality Management, DRONE Technology, Re-entry Vehicle Technology etc.

Students will get to be a part of Summer Industrial Training (8 Weeks) program after completion of 3rd year. They will also be offered 10 to 12 days long flight training.

Skill Enhancement Courses

- Matlab for Engineers
- Advance Matlab for Aerospace Engineers
- Python
- Artificial intelligence
- (AI) and Machine learning (ML) for Aerospace Application