



SCHOOL OF ENGINEERING & SCIENCES



AEROSPACE DEPARTMENT
FROM FOUNDATION TO FLIGHT

Your journey begins here...



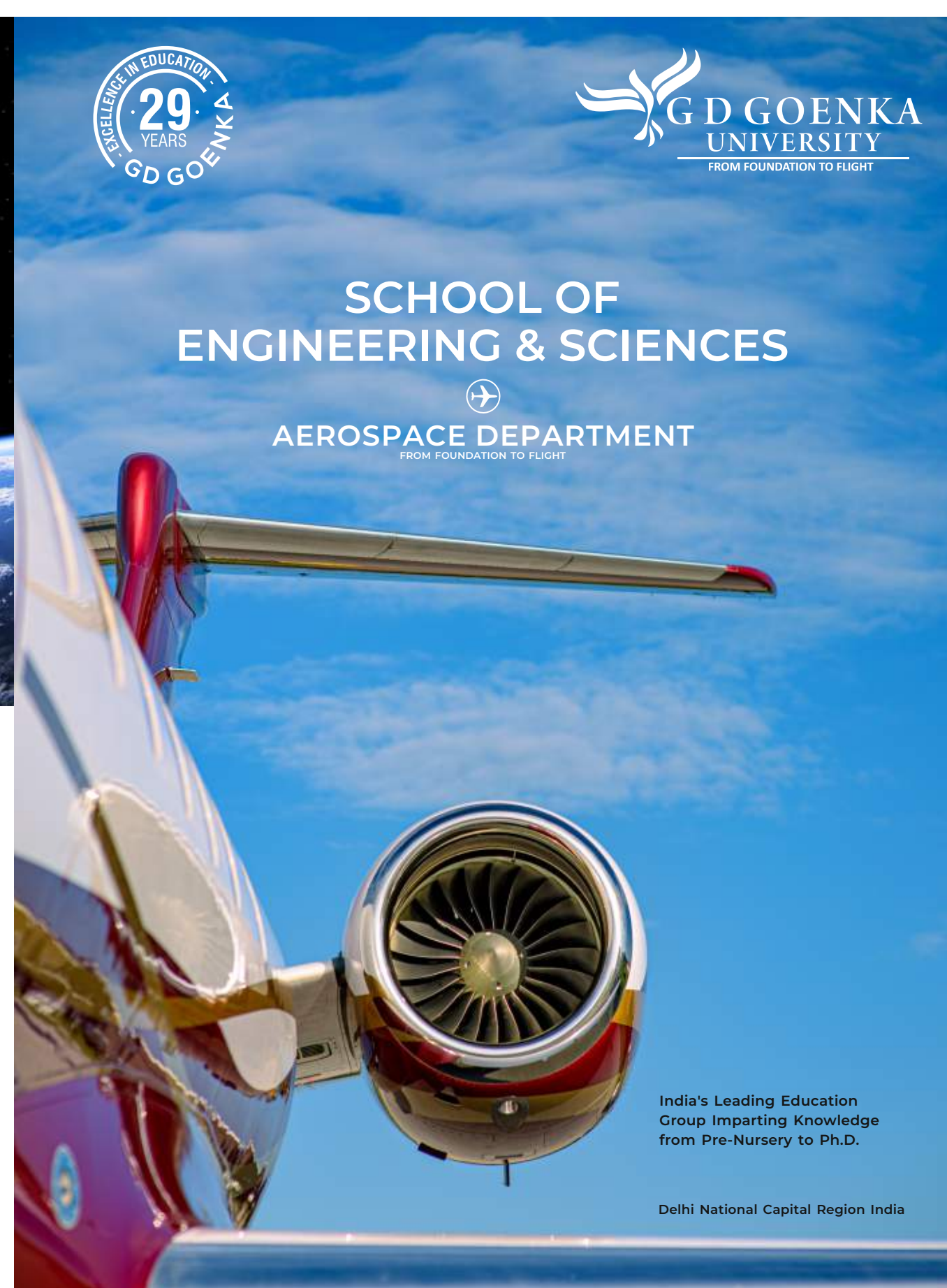
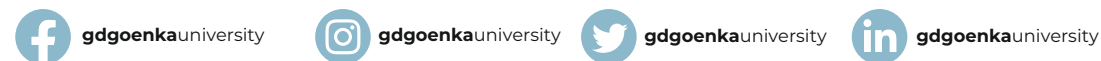
AEROSPACE DEPARTMENT

Come and meet us

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aerospace.gdgoenka-university.com

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Programme*



India's Leading Education
Group Imparting Knowledge
from Pre-Nursery to Ph.D.

Delhi National Capital Region India

The Goenka Campus



Home to the world's second largest higher education environment

Students at GD Goenka University are provided substantial opportunities to experience the culture, work and study environment in one of the world's largest and most rapidly growing economies. Students are provided the opportunity to work or intern at Indian and Foreign companies operating in India. The University is based in Gurugram, one of the major commercial hubs in India.



B.Tech Aerospace Engineering

Duration - 4 Years

Aerospace Engineering

Aerospace Engineering Program aims to train and educate the young Aerospace engineers of the future, who will work in the design, deployment, and testing of aircraft, spacecraft, satellites, and aerospace related defense equipment.

About the Program

GD Goenka Aerospace Department provides students with flexible opportunities through a holistic program to prepare them for their future careers. Students will learn the fundamentals of engineering principles in their first 2 years to prepare them their background, while also taking some fundamental courses of Aerospace Engineering from the 1st semester onwards.

From their 3rd year, students will be channeled into one of the three streams through elective courses to help them become specialists. Students will be mentored by the department to choose the right specialization that fits their interests and expectations for the future. Student may also take noncredit courses from other areas to help diversify their background.

- Specialization in **Aeronautics**
- Specialization in **Astronautics**
- Specialization in **Avionics**
- Specialization in **Defense Technologies**

Internship

There is a mandatory internship after their 3rd year and students are counseled and channeled toward various internship programs in India as well as abroad.

Industry Courses

The course is taught with several industry partners to help prepare the students toward the industry, so that they are employable from their first day at work. Industrial visits, courses, and workshops by industry experts are conducted to help prepare the students for their future careers. Various focused international mobility opportunities are provided to the students and for students who wish to go abroad for higher studies and work, special mentoring & support is provided.

Student Exchange Abroad

All students are required to do one semester abroad either for student exchange or for international internships as per their choice. The Aerospace Department will arrange these international student exchange programs and internships.



Pathway to Pilot Programme

In this degree program the student will study at our Aerospace Engineering Department to get his/her Aerospace Engineering Degree but at the 4th year, the student will be sent to Florida, USA through Atlantis Aviation to train to become a pilot. At the end of the training the student after qualification the student get their Commercial Pilot License as well as their Instructor License and will get 1000 hours of flight training. In the end of the program, the students will be offered jobs as a pilot as well as a Greencard to work in USA as a qualified pilot. This way, you get your Aerospace Engineering Degree and your Commercial Pilot License as well as Job as a Pilot and a Residence Permit in USA or other locations as a qualified pilot.

M.S. Aerospace Engineering by Research

This 2 year program focuses mainly on those students who wish to get their postgraduate degree by doing pure research and hence it is preferable to MTech Degree for those students who wish to go for PhD or for industrial specialisation through research. Aerospace Department also offers 1 year mobility abroad in the second year where the students can study for the whole year (3rd and 4th sem) in our international partners or can choose to go for a 6 month internship in the prestigious research labs of France, Italy, UK, USA, Korea and many others. In the first year, the student has to take 3 mandatory courses that is common to all and take elective courses for specialization in Aerospace Engineering. The elective courses are offered at postgraduate level and included Advanced Satellite Systems, Applications of Remote Sensing, Compressible Flow, Aerospace System and Mission Design, Orbital Mechanics and Spacecraft Dynamics, Rotary System Aerodynamics and Computational Fluid Dynamics along with others. The remaining course is conducted in a research format where the student will conduct pure research in his/her second year for their Master Thesis. As stated above, The Aerospace Department also offers all Master's students to study one year abroad in their area of specialization or to be able to have a 6-month research internship abroad.



Ph.D. in Aerospace Engineering

The Doctor of Philosophy (Ph.D.) in Aerospace Engineering degree is intended for students who desire a career in research, advanced development, or teaching. Students in the Ph.D. in Aerospace Engineering program obtain a broad education in the core areas of Aeronautics and Astronautics through coursework, while also engaging in intensive research in a specialized area, resulting in a doctoral thesis. You have to pass 3 fundamental courses before progressing to the Synopsis stage. The coursework lectures can be completed on weekends, but also requires additional study by the Ph.D. students. Once at the Synopsis stage you will be assigned a mentor/guide for your research and thesis. You also have an option to conduct part of your research abroad. Two publications (minimum Scopus indexed) is required to be eligible for thesis submission also some Ph.D. scholars can also work as teaching assistants or research assistants. Please contact the department about available research topics.

Specializations

Aerospace engineering students can specialize in any of three sub-branches of Aeronautics, Astronautics, and Avionics. The students can choose their specialisation in the beginning of their third year:

- **Aeronautics** consists of atmospheric flight including commercial jets, military jets, business jets, helicopters, UAV, Air Balloons and any other craft that flies in the atmosphere. The student will study Aerodynamics, Compressible Flow, CFD, Flight Control and similar subjects.
- **Astronautics** deals with spacecraft such as rockets, satellites, shuttles, probes, re-entry vehicles and so forth. Hence, students can subspecialize in rocket propulsion, satellite communications, hypersonic commercial spaceflight, orbital mechanics, and space science which encompasses our solar system and space weather in general.
- **Avionics** deals with the electronics systems of both aircraft and spacecraft. Avionics engineers are also in high demand from both the aviation sector as well as from the commercial spaceflight sector.
- **Defense Technologies** deals with aeronautical and aerospace defense equipment including but not limited to Hypersonic Missiles, Subsonic Missiles, Guided Lasers, Military Satellites and Reconnaissance with Remote Sensing, Military UAV and Weaponized Drones.





Career Prospects

Global

An Aerospace Engineer can work as an aeronautical design engineer, flight engineer, aeronautical maintenance engineer, aeronautical operations specialist, satellite design engineer, avionics engineer, flight systems design, rocket engineer, satellite engineer, space systems engineer, space mission planner. In addition, many aerospace engineers work in the defense sector for defense companies and defense technologies such as missile systems, armed UAV, radar systems, intercept systems etc. Furthermore, an aerospace engineer can work in many engineering firms as an analyst and designer too since an Aerospace Engineer has background of several engineering disciplines. Due to the boom of global space tourism, thousands of new jobs are being generated every year. Moreover, this year it is expected that the global aerospace market will surpass 1 Trillion US Dollars, making the aerospace sector one of the biggest sectors in the world. Due to the boom of global space tourism, internet satellite providers, and due to the growing private aerospace sector and aviation thousands of new jobs are being generated every year.

India

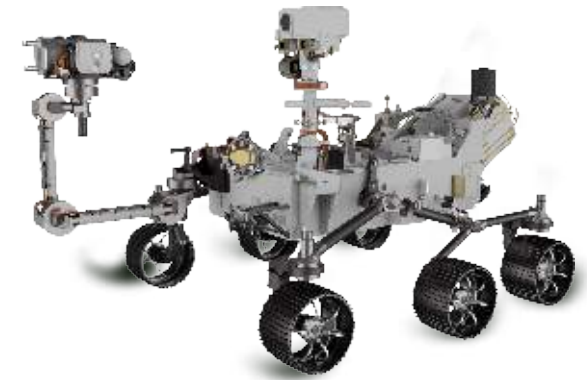
India is one of the most prominent countries in aviation and astronautics. In the aviation sector, it is the third largest country after USA and China in terms of aviation flight traffic and it's growing every day. In addition, India has its own indigenous aircraft and defense systems. On the space side, India is again the 3rd country in the world in terms of overall and deep space mission capability. Moreover, India holds the record for sending the greatest number of satellites to space in a single launch. It was the Chandrayaan Mission in 2009 which found water on the moon and made lunar colonization feasible with this discovery. Furthermore, the Mars Orbiter Mission by ISRO proved that going to Mars is actually more feasible and cheaper than the movie "Gravity". In addition, with the upcoming Solar Mission and Venus Mission, India is at the forefront of space exploration. Many service companies in India provide support to Aerospace companies across then world, opening thousands of new jobs in the Indian market every year. Furthermore, many startup companies are also coming up in India such as Skyroot and Bellatrix that pave the way in the industry. Hence, this is a great time to be an Indian in the global and national aerospace sector.

Scope for Higher Studies

There are various good universities that provide graduate engineering programs in Europe, USA, UK, Canada, Australia and interested students are groomed and guided by the department for their higher studies abroad or in India. Several workshops are given to prepare them for GRE, GMAT, TOEFL and any other requisites. Students are given one-on-one mentorship for preparing their applications.

Scope for Internationality

Students are encouraged to take part in semester exchange mobility across the world including funded programs like Erasmus Plus, which pays the part of the travel and accommodation expenses of the student to Europe. In addition, internship opportunities are also provided abroad in other universities and companies. Aerospace program is designed to maximize international immersion and opportunities.



Aerospace Companies & Organisations in India

Aviation



Government



Private



Startups



Campus Life

Learn with Fun Apart from the latest curricula and a team of experienced faculty for each School, the University believes in giving a 360* degree learning orientation to its students by way of its high energy and fun filled events like Sportopia, Acceleron, Transcend and REVA.

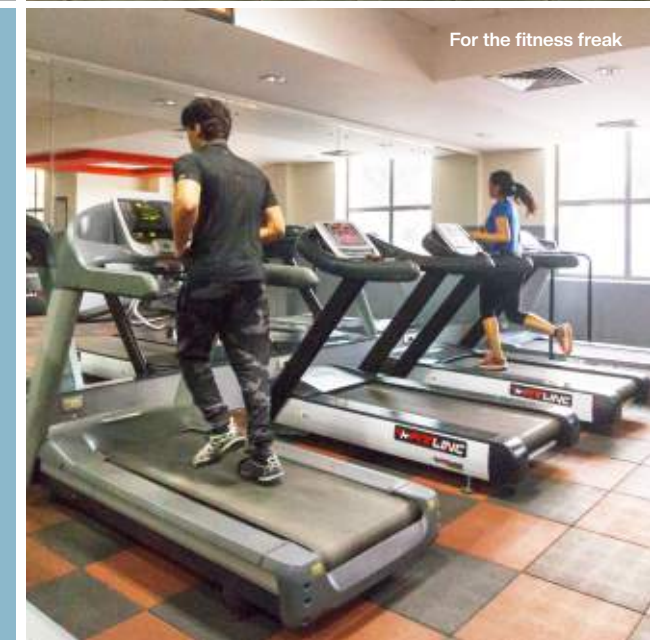
Sports & Fitness Centre Sports and fitness activities are an integral part of students' development at the University. A separate state-of-the-art indoor and outdoor sports complex and gymkhana provide facilities for almost all sports with unmatched facility for cricket, football, volleyball, Snooker, Chess and Carom. Apart from the weather controlled swimming pools the Gymnasium of the University is equipped with advanced treadmills, cross trainers, spinners etc. along with the physical instructors.



Infrastructure & Amenities

Our campus offers everything we think you'll need during your time with us

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- Sports Centre
- Restaurants
- Doctor
- Cafes
- Beauty Salon
- Pharmacy
- Library
- Amphitheatre
- Super Market
- Prayer room
- Bank
- GOENKA INN Guest House