Call for Admissions

MS/PhD in
Global Navigation Satellite Systems (GNSS)

According to the education curriculum designed by
United Nations Office for Outer Space Affairs (UNOOSA)

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Global Navigation Satellite Systems (GNSS)

Global Navigation Satellite Systems (GNSS) include constellations of Earth-orbiting satellites that broadcast their locations in space and time, of networks of ground control stations, and of receivers that calculate ground positions by trilateration. At present GNSS include two fully operational global systems, the United States’ Global Positioning System (GPS) and the Russian Federation’s GLObal NAvigation Satellite System (GLONASS), as well as the developing global and regional systems, namely Europe’s European Satellite Navigation System (GALILEO) and China’s COMPASS/BeiDou, India’s Regional Navigation Satellite System (IRNSS) and Japan’s Quasi-Zenith Satellite System (QZSS). Once all these global and regional systems become fully operational, the user will have access to positioning, navigation and timing signals from more than 100 satellites. In addition to these, there are satellite-based augmentation systems, such as the United States’ Wide-area Augmentation System (WAAS), the European Geostationary Navigation Overlay Service (EGNOS), the Russian System of Differential Correction and Monitoring (SDCM), the Indian GPS Aided Geo Augmented Navigation (GAGAN) and Japanese Multi-functional Transport Satellite (MTSAT) Satellite-based Augmentation Systems (MSAS).

MS GNSS

The Masters of Science in Global Navigation Satellite Systems (MS GNSS) at Department of Aeronautics and Astronautics, Institute of Space Technology, Islamabad is a specialized Master Program structured according to the GNSS curriculum proposed and designed by the United Nations Office for Outer Space Affairs (UNOOSA) and offered for the very first time in Pakistan. The MS GNSS course work consists of eight subjects each of three credit hours covering specific areas of GNSS (theory, technology and applications) followed by a six credit hours Thesis. Candidates who wish to pursue their PhD in GNSS are also welcomed.

**MS GNSS Courses**

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GNSS Applications

Location Based Services
- Location based Information Streams
- Tourist Information
- Games
- Carpooling and Transport on Demand

Civil Applications
- Personal Applications
- Road Applications
- Aviation Applications
- Rail Applications
- Maritime Applications
- Industry Applications
  Surveying, Mapping and GIS
  - Land Surveying
  - Mapping & GIS
  - Aerial Survey

GNSS-based Products
- GNSS Receivers

Space Applications
- Precise Orbit Determination
- Satellite Real-time Navigation
- Satellite Formation Flying
- Satellite Attitude Determination

Scientific Applications
- Earth Sciences
- Space-time Metrology
- Fundamental Physics
- Atmospheric Sensing

Military Applications
- Military Navigation
- Target Acquisition

Autonomous Applications
- Autonomous Driving
- Autonomous Flying

Timing Applications
- Precise Time Reference
- Computer Networks
- Power Grids

GNSS Job Prospects

Telecommunication Industry
Aerospace Industry
Robotics
Aviation and Air Traffic Management
Maritime Technology
Rail and Road Transportation
Agriculture
Environment
Remote Sensing & GIS

Emergency and Rescue
Mapping and Surveying
Urban Planning and Management
Computer Networks
Gaming
Power Grids
e-Business
Eligibility

BE/ BS in Electronics and Communications Engineering
Civil Engineering
Mechatronics Engineering
Aerospace / Avionics Engineering
Software and Computer Engineering
Environmental Engineering
MSc Electronics / Communication / Physics / Space Sciences

Details

Evening Program
Merit Scholarships are Available
Limited number of Teaching / Research Assistant Ships for full tuition fee waiver & monthly stipend are available.
Apply online for admission at www.ist.edu.pk
Graduate Assessment Test (GAT) - General for MS
GAT - Subject Test taken by NTS or GRE-Subject for PhD
For eligibility criteria and other details, please visit IST website www.ist.edu.pk
Transport available from designated points (Islamabad/Rawalpindi)
Limited Hostel facility available

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