



ITEC

Indian Technical and Economic Cooperation Programme
Ministry of External Affairs, Government of India



Indian National Space Promotion and Authorization center,
Department of Space, Government of India

Space Technologies for the Benefit of Mankind Indo-African Perspective

A Short -Term Capacity Building Course for
Administrators, Technocrats and
Professionals from African countries

April 27 – May 08, 2026

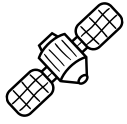
Conducted by

**Indian National Space Promotion and Authorization Center
(IN-SPACe)**

In Association with

Indian Space Research Organization

Department of Space
Government of India



IN-SPACE Short -Term Capacity Building Course on “Space Technologies for the Benefit of Mankind - Indo-African Perspective”



Government of India under the visionary leadership of Hon’ble PM Shri Narendra Modi has initiated historic space sector reforms. The objective of space reforms is to make India a leading space economy globally, through increased private sector participation. Indian National Space Promotion and Authorization Centre (IN-SPACE) has been formed under Department of Space (DOS), to promote, enable, authorize and supervise Non-Government Entities (NGEs) and academia to undertake space activities.

To foster the Indo – African cooperation in space sector



OBJECTIVE



COURSE INFORMATION

In order to foster Indo-African cooperation in space sector, IN-SPACE in association with ISRO and Ministry of External Affairs - India, is pleased to launch the short term course on “Space technologies for the benefit of mankind: Indo-African perspective”. This unique course is designed for the benefit of Administrators, Technocrats and professionals from African countries who are likely to get benefitted by exposure to the potential benefits the Indian Space enterprise can offer.

The course on “Space Technologies for the mankind: Indo-African Perspective” provides an overview of the space technologies and their applications for the benefit of society, with specific emphasis on its relevance to Indo-African community. This unique course gives an insight into the major components of Space technologies viz. Launch Vehicles, Satellites and associated ground systems. Greater emphasis is laid on applications of space technologies in Geo-Spatial, Earth Observation, Communication and Navigation services. Also, covered are the topics related to International conventions, treaties, policies related to utilization of Space for larger benefit of mankind. Emerging topics like New Space policy and space economics are also touched upon.



ABSTRACT

OUTLINE OF COURSE

DAY
1

Introductory sessions on Indian Space Programme and Space Transportations System

DAY
2

Satellite Technologies & Systems Engineering

DAY
3

Ground Systems & Satellite Data Processing

DAY
4

Satellite Data Processing & Space Applications

DAY
5

Space Applications

DAY
6

LOCAL SIGHT SEEING / PERSONAL TIME

DAY
7

LOCAL SIGHT SEEING / PERSONAL TIME

OUTLINE OF COURSE

DAY 8	SATNAV & SATCOM
DAY 9	Space Law & Economics
DAY 10	Modules on Cyber Security / Valedictory Session / Distribution of Certificates / Networking Session
DAY 11	Visit to Local Industries / Institutions working in Space sector
DAY 12	Visit to Semi - Conductor Laboratory, Chandigarh



DAY - 1 [27-04-2026]			
09:30 - 12:30 Hrs.	Brainstorming Session on Engagement with Ambassadors of select African Countries with Chairman IN-SPACE, representatives from DOS / ISRO and MEA		TBD
12:30 - 13:30 Hrs.	Lunch		
13:30 - 14:30 Hrs.	Invocation Introduction of participants Keynote Address National Anthem		TBD
Time	Module	Title of Talk	Faculty/Course Instructor
14:30 - 15:30 Hrs.		L1 : India in Space: Achievements & Capabilities	Dr. Umamaheswaran R Distinguished Scientist (Retd.), Former Scientific Secretary & Director HSFC, ISRO
15:30 - 16:00 Hrs.	Tea Break		
16:00 - 17:00 Hrs.	Fundamentals of Space Transportation	L2 : Space Transportation Systems - An overview	Dr. V Ashok Retd AD, VSSC Prof. Sathish Dhawan Professor, VSSC, ISRO
17:00 - 18:00 Hrs.		L3 : Launch Vehicle Mission Design and Operations	Mr. Sowmianarayanan L Director, IISU, ISRO
18:00 - 19:00 Hrs.	Ice Breaking Session		
19:00 - 20:00 Hrs.	Dinner		



DAY-2 [28-04-2026]			
Time	Module	Title of Talk	Faculty/Course Instructor
09:30 – 10:30 Hrs.	Satellite Technologies & Systems Engineering	L4: Satellite Systems engineering	Dr. Prakasha Rao PJVKS Retd Director, SIPO, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	Satellite Technologies & Systems Engineering	L5: Introduction to Orbital Mechanics: LEO, MEO, GEO, and Sun-synchronous orbits.	Dr. R Pandian Retd GD, FDG, URSC, ISRO
12:00 - 13:00 Hrs.		L6: Fundamentals of Attitude and Orbit Control Systems	Mr. K Subbarao DH, Mission Planning & Analysis, URSC, ISRO
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	Satellite Technologies & Systems Engineering	L7: Low cost access to space for developing Nations : Small Satellites & Cubesats.	Dr D V A Raghavamurthy Retd Project Director, Small Satellites, URSC, ISRO
15:00 - 15:30 Hrs.	Tea Break		
15:30 - 16:30 Hrs.	Satellite Technologies & Systems Engineering	L8: Satellite Payload Systems - SAR	Ms. Swati Duggal Scientist / Engineer - SAC, ISRO
16:30 – 17:30 Hrs.		L9: Satellite Payload Systems - Optical	Mr. Senthil Kumar GD, SAC, ISRO



DAY -3 [29-04-2026]			
Time	Module	Title of Talk	Faculty/Course Instructor
09:30 – 10:30 Hrs.	Ground Systems & Mission Operations	L10: Spacecraft Attitude & Orbit Control Systems	Mr. Aditya R Ex-URSC, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	Ground Systems & Mission Operations	L11: Ground Station as A Service - Requirements & Considerations	Mr. Umang Parikh GM, Ground Segment and Mission Operations, NSIL
12:00 - 13:00 Hrs.	Satellite Data Processing & Quality	L12: Basics of Remote Sensing	Mr. Abhinav Shukla RC-N, NRSC, ISRO
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	Satellite Data Processing & Quality	L13: Image processing of Satellite data - Radiometric & Geometric Corrections and recent trends including AI/ML	Dr. S. Manthira Moorthi SIPA, ODPG, SAC, ISRO
15:00 - 15:30 Hrs.	Tea Break		
15:30 - 16:30 Hrs.	Satellite Data Processing & Quality	L14: Fundamentals of Photogrammetry - Satellite, Aerial, UAV & Lidar Data Processing	Mr. J Narendran GH, NSG, NRSC, ISRO
16:30 – 17:30 Hrs.		L15: Value Added & Special Product Generation including DEM /DSM, DTM	Mr. B Gopala Krishna Retd DD, NRSC, ISRO

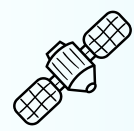


DAY – 4 [30-04-2026]			
Time	Module	Title of Talk	Faculty/Course Instructor
09:30 – 10:30 Hrs.	Satellite Data Processing & Quality	L16: Microwave SAR fundamentals, Processing, Calibration & Validation	Ms. P V Jayasri DH, MPSDD, NRSC, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	Satellite Data Processing & Quality	L17: Satellite Data & Product quality assessment	Ms. B Santhi Sree GD, NRSC, ISRO
12:00 - 13:00 Hrs.		L18: Data Acquisition, Archival & Dissemination	Dr G Prasad Retd GH, NRSC, ISRO
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	Satellite Data Processing & Quality	L19: Introduction to GIS, Database Management System, Spatial Data analysis	Mr. R J Bhanderi GAWG, UGAD, SAC, ISRO
15:00 - 15:30 Hrs.	Tea Break		
15:30 - 16:30 Hrs.	Space Applications	L20: Geospatial Applications in Agriculture Sector & current trends	Dr V M Chowdhary GD, NRSC, ISRO
16:30 – 17:30 Hrs.	Practical Aspects	P1: Digital Data Dissemination through Bhoonidhi portal	Ms. Manju Sharma Retd DD, NRSC, ISRO

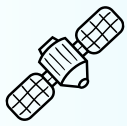


DAY – 5
[01-05-2026]

Time	Module	Title of Talk	Faculty/Course Instructor
09:30 – 10:30 Hrs.	Space Applications	L21: Geospatial Applications in Water Resources Management	Dr P V Raju Retd GD, NRSC, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	Space Applications	L22: Geospatial Applications in Forestry , Ecology and Environmental Sustainability	Dr Hitendra Padalia IIRS, ISRO
12:00 - 13:00 Hrs.		L23: Urban studies and Digital twins	Dr K Venugopal Retd GD, NRSC, ISRO
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	Space Applications	L24: Mines & Geology : Geologic Studies and Mineral exploration	Dr A K Joshi Retd GH, NRSC, ISRO
15:00 - 15:30 Hrs.	Tea Break		
15:30 - 16:30 Hrs.	Space Applications	L25: EO for Disaster Risk Reduction	Dr KHV Durga Rao GD,DMSG, NRSC, ISRO
16:30 - 17:30 Hrs.		L26: EO for Marine, Oceanic & coastal Processes	Dr K N Babu GH,AOSG,BOD,SAC, ISRO



DAY – 8 [04-05-2026]			
Time	Module	Title of Talk	Faculty/Course Instructor
09:30 - 10:30 Hrs.	Space Applications	L27: Space based observation for Weather Monitoring & Prediction	Dr Randhir Singh AOSG, ASD, SAC, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	SATNAV & SATCOM	L28: Concepts of various Coordinate systems, Reference Frames and Spherical Position fixing using satellite data	Dr Vimal Bhandari SD, SAC, ISRO
12:00 - 13:00 Hrs.		L29: Introduction to Space based Navigation and Augmentation techniques including application of GNSS	Mr. Deval Mehta GD, NTAG, SAC, ISRO
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	SATNAV & SATCOM	L30: Satellite Communication Payloads - Translating user requirements to System design	Mr. K S Parikh Resident Expert, IN-SPACe
15:00 - 15:30 Hrs.	Tea Break		
15:30 - 16:30 Hrs.	SATNAV & SATCOM	L31: SATCOM Applications including disaster support	Mr. P K Srinivasan SG, SAC, ISRO
16:30 – 17:30 Hrs.	Practical Aspects	P2: Bhuvan Geoportal for Governance & Services	Mr. Vinod Bothale Resident Expert, IN-SPACe

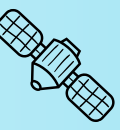
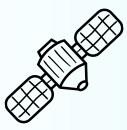


DAY – 9
[05-05-2026]

Time	Module	Title of Talk	Faculty/Course Instructor
09:30 – 10:30 Hrs.	Practical Aspects	P3: Introduction to VEDAS/ MOSDAC portal of ISRO	Mr. Shashikant Sharma SAC, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	Space Law & Economics	L32: Overview of Space law and its interface with International Conventions & Treaties	Dr. Kumar Abhijeet Legal Officer, Ministry of External Affairs
12:00 - 13:00 Hrs.		L33: Introduction to International law - Sovereign rights, International cooperation, United Nations bodies and Sustainable Development Goals	Mr. Kiran Mohan Vazhapully Senior Legal Officer, Asian-African Legal Consultative Organization (AALCO)
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	Space Law & Economics	L34: Space Economics, Trade and Fiscal Policy	Dr. Shaijumon CS Associate Professor of Economics, Indian Institute of Space Science and Technology (IIST)
15:00 - 15:30 Hrs.	High Tea		
15:30 - 16:30 Hrs.	Space Law & Economics	L35: Introduction to Space Entrepreneurship: <ul style="list-style-type: none">• Key Drivers of Growth• Mindset of a Space Entrepreneur	Ms. Anuradha Sharma IIM Bangalore
16:30 - 18:00 Hrs.	Start-up Bootcamp / Workshop	L36: Developing Entrepreneurship skills for Space Sector	Ms. Sandya Bhat Asnotikar State President, Karnataka Aerospace Council



DAY – 10 [06-05-2026]			
Time	Module	Title of Talk	Faculty/Course Instructor
09:30 – 10:30 Hrs.	Space Applications	L37: Study of Global Warming, Green House Gases, Coral beach, Sea Surface Temperatures	Dr CBS Dutt Retd DD, NRSC, ISRO
10:30 - 11:00 Hrs.	Tea Break		
11:00 - 12:00 Hrs.	Cyber Security in Space	L38: Cyber Security of Space Domain: Need, Strategy, Policy and Management	Mr. Haresh Bhatt Retd Mission Director and Chairman, Cyber Security Board, ISRO
12:00 - 13:00 Hrs.		L39: Protecting Space Assets from Cyber threats, Emerging trends and Policy: AI / ML for autonomous space cyber defense	Dr. Bhupendra Singh Cyber Security and Quantum Domain Expert, Scientist – F, CAIR, DRDO
13:00 - 14:00 Hrs.	Lunch Break		
14:00 - 15:00 Hrs.	QUIZ (Written Test)		
15:00 - 16:30 Hrs.	Networking Session		
16:30 - 17:30 Hrs.	Feedback / Valedictory Session / Distribution of Certificates		



DAY-11
[07-05-2026]

Visit to NGE's	1. Suhora Tech Pvt. Ltd, Noida
	2. BEL, Ghaziabad
	3. Cyran AI Solutions
	4. Trishul Aerospace

DAY-12
[08-05-2026]

Visit	Semi-conductor Laboratory, Chandigarh
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Who can Apply

Administrators, Technocrats and Professionals from African countries

Venue & Accommodation: Indian Aviation Academy, New Delhi

Course Director (s): Mr. Ganesh Mohan, Deputy Director, PD, IN-SPACe

Course Co-ordinator: Mr. Partha Pratim, Assistant Director, PD, IN-SPACe

Commencement of Course: April 27, 2026



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