



Skill Development Short Term Course on **Essentials of Satellite Manufacturing**



Course Duration : November 16 - November 21, 2025
Venue : Chanakya University Global Campus, Bengaluru

Skill Development Short Term Course on Essentials of Satellite Manufacturing



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.

Skill development of Industry and Academia in Space Sector



OBJECTIVE



COURSE INFORMATION

In order to transform the government's vision to reality, IN-SPACe in association with ISRO, Chanakya University - Bengaluru is pleased to announce short term domain specific courses wherein the individual will be trained on the various aspects of space technology.



ABSTRACT

The course on "Essentials of Satellite Manufacturing" provides a comprehensive overview of satellite technology, covering various aspects from its fundamental principles to realization. This unique course covers various aspects of satellite technology such as mission design, attitude & orbit control system, thermal, structure, spacecraft mechanism, power system, TTC, latest trends in optical & microwave remote sensing, communication and navigation payloads, spacecraft integration & check out activities during various phases including quality & reliability. The course aims to equip participants with the fundamental principles, practical knowledge and the latest trends in satellite technology. The course will empower participants with a basic understanding of various elements associated with satellite technology.

DAY-0 (16-11-2025)			
10:30 - 12:30 Hrs.	Inaugural Session	Invocation Introduction of participants Keynote Address National Anthem	Keynote Speaker Shri. M Sankaran, Distinguished Scientist, Director, URSC / ISRO
12:30 - 14:00 Hrs.	Lunch Break		
14:00 - 16:00 Hrs.	Ice Breaking Session		
DAY-1 (17-11-2025)			
Time	Module	Title of Talk	Faculty/Course Instructor
09:00 - 10:00 Hrs.	Mission Management	L1: Spacecraft Mission Planning and Operations	Dr. Ramakrishna, Former Director, ISTRAC / ISRO
10:00 - 11:00 Hrs.	Spacecraft Structures	L2: Spacecraft Structural design, Manufacturing processes and facilities needed for space structures	Mr. Subba Rao K GD STG, URSC / ISRO
11:00 - 11:30 Hrs.	Tea Break		
11:30 - 12:30 Hrs.	Spacecraft Structures	L3: Analytical computation techniques for Spacecraft Structures including flexibility computations	Mr. Muralidhar K V, DH, Structures Group, URSC / ISRO
12:30 - 13:30 Hrs.	Spacecraft Structures	L4: Structural Testing of Spacecraft (Static, dynamic and NDT)	Dr. M. N. M Patnaik, Sci/Engr-G, DH, Structures Group, URSC / ISRO
13:30 - 14:30 Hrs.	Lunch Break		
14:30 - 15:30 Hrs.	Inertial Systems	L5: Spacecraft inertial systems design and realization aspects	Dr. D Sam Dayala Dev, Visiting Professor, IITM, Distinguished Scientist, Ex Director, IISU / ISRO
15:30 - 16:30 Hrs.	Thermal Control Systems	L6: Considerations and design drivers for spacecraft Thermal Control Systems Design, coupled mode thermal analysis	Dr. Alok Shrivastava, Director, ATL Former AD, URSC / ISRO
16:30 - 17:00 Hrs.	Tea Break		
17:00 - 18:30 Hrs.	Practical Aspects	P1: Take a Honeycomb Panel of say 50cm by 50 cm. Have Insert bonding requirement. Teach from hardware... insert limitations, design considerations, process of mounting and loading.QA inspection after structure clearance.	Structures Team, URSC

DAY-2 (18-11-2025)

Time	Module	Title of Talk	Faculty/Course Instructor
09:00 - 10:00 Hrs.	Thermal Control Systems	L7: Fundamentals of Thermal Control System Design (Heat transfer related to Spacecraft thermal control. Contact Resistance and Radiation Shielding Classification of Thermal Control System – Passive & Active Thermal Control)	Dr. Abhijit Adorji, DH, TSG, URSC / ISRO
10:00 - 11:00 Hrs.	Thermal Control Systems	L8: Spacecraft environment and its effects on thermal systems design, Environmental specifications for thermal	Dr. Venkata Raghavendra, GD, Thermal Systems Group, URSC / ISRO
11:00 - 11:30 Hrs.	Tea Break		
11:30 - 12:30 Hrs.	Thermal Control Systems	L9: Testing of Thermal Systems : Need, philosophy and simulation, Tvac testing, thermal balance test, instrumentation	Dr. Venkata Raghavendra, GD, Thermal Systems Group, URSC / ISRO
12:30 - 13:30 Hrs.	Spacecraft Mechanism Systems	L10: Modelling, simulation and analysis of spacecraft mechanism systems	Mr. K Balaji, DH, Mechanisms Group, URSC / ISRO
13:30 - 14:30 Hrs.	Lunch Break		
14:30 - 15:30 Hrs.	Spacecraft ADCS	L11: Design and Development of Spacecraft Attitude Sensors	Ms. Kalpana Aravind, Former AD, LEOS / ISRO
15:30 - 16:30 Hrs.	Spacecraft Mechanism Systems	L12: Design and realization of Spacecraft mechanisms systems	Mr. H N Suresh Kumar, Former, DD, MSA, URSC / ISRO
16:30 - 17:00 Hrs.	Tea Break		
17:00 - 18:30 Hrs.	Practical Aspects	P2: Assembly, Integration & Testing of mechanism elements at subsystem level. Followed by S/C level AI&T. Criticalities of all stages.	Mechanisms Team, URSC / ISRO

DAY-3 (19-11-2025)

Time	Module	Title of Talk	Faculty/Course Instructor
09:00 - 10:00 Hrs.	Spacecraft Mechanism Systems	L13: Testing of spacecraft Mechanisms systems	Mr. Abhishek Kumar, DH, SMG, URSC / ISRO
10:00 - 11:00 Hrs.	Thermal Control Systems	L14: Thermal Material - Selection and Design Aspects for spacecraft and their degradation in the space environment	Dr. Rajendra A, DD, MSA, URSC / ISRO
11:00 - 11:30 Hrs.	Tea Break		
11:30 - 12:30 Hrs.	Spacecraft Power Systems	L15: Evolution of Spacecraft Power system: Past, Present and Future	Mr. Ranganath S Ekkundi, Former DD, URSC / ISRO
12:30 - 13:30 Hrs.	Spacecraft Power Systems	L16: Spacecraft: Power system configuration & Management: Battery, Power Electronics and Solar Panel,	Mr. M S Srinivasan, Former GD, URSC / ISRO
13:30 - 14:30 Hrs.	Lunch Break		
14:30 - 15:30 Hrs.	TTC and Base Band Systems	L17: Spacecraft RF Systems including command encryption systems	Dr. Senthil Kumar V, GD, Comm. Systems Group, URSC/ISRO
15:30 - 16:30 Hrs.		L18: Spacecraft Base Band and Data Storage Systems	Mr. Thakar Lalitkrushna, DH, PDMG, URSC / ISRO
16:30 - 17:00 Hrs.	Tea Break		
17:00 - 18:30 Hrs.	Practical Aspects	P3: Package Mounting, Harness preparation, ICD matching etc. P4: Solar Panel wiring demonstration	AIT Team, URSC / ISRO Power Team, URSC / ISRO

DAY-4 (20-11-2025)

Time	Module	Title of Talk	Faculty/Course Instructor
09:00 - 10:00 Hrs.	System Integration	L19: Spacecraft mechanical assembly, integration and testing	Mr. Kumar SS, Former GD, URSC / ISRO
10:00 - 11:00 Hrs.	System Integration	L20: Electrical Integration configuration design, assembly, integration and testing including EMI/EMC analysis	Ms. Anju Damodaran, SH, SIG, URSC / ISRO
11:00 - 11:30 Hrs.	Tea Break		
11:30 - 12:30 Hrs.	System Integration	L21: Design and testing viz. spacecraft level RF characterization of Payloads and antennas	Dr. Puneet Kumar Mishra, SH, URSC / ISRO
12:30 - 13:30 Hrs.	Spacecraft Checkout Systems	L22: Overview of spacecraft checkout systems & configuration, Satellite Testing during various phases of AIT	Mr. V Krishnan, Prof. Satish Dhawan Scientist, URSC / ISRO
13:30 - 14:30 Hrs.	Lunch Break		
14:30 - 15:30 Hrs.	Spacecraft Checkout Systems	L23: Special Lecture: Spacecraft Configuration, Design and Realization aspects	Dr. Ramanagouda V Nadagouda, Distinguished Scientist, AD, URSC / ISRO
15:30 - 16:30 Hrs.	Spacecraft ADCS	L24: Spacecraft Attitude and Orbit Control System including Sensors and Actuators (with Modal Analysis)	Mr Bharat Kumar G V P, Division Head, MSG, URSC / ISRO
16:30 - 17:00 Hrs.	Tea Break		
17:30 - 18:00 Hrs.	TBD	L25: TBD	TBD
18:00 - 19:30 Hrs.	Practical Aspects	P5: Demonstration of Thermal control systems fabrication, implementation and inspection	Thermal Team, URSC / ISRO

DAY-5 (21-11-2025)

Time	Module	Title of Talk	Faculty/Course Instructor
09:00 - 10:00 Hrs.	Spacecraft Payload Systems	L26: Communication and Navigation Payloads Trends and Technologies	Mr. Sumitesh Sarkar, DD, SAC / ISRO
10:00 - 11:00 Hrs.	Spacecraft Payload Systems	L27: Fundamentals and latest trends in Microwave Remote Sensing	Mr. CVN Rao, DD, SAC / ISRO
11:00 - 11:30 Hrs.	Tea Break		
11:30 - 12:30 Hrs.	Spacecraft Payload Systems	L28: Optical Payloads Trends and Technologies	Mr. Somya S. Sarkar, Distinguished Scientist, SAC / ISRO
12:30 - 13:30 Hrs.	Quiz		
13:30 - 14:30 Hrs.	Lunch Break		
14:30 - 15:30 Hrs.	Spacecraft On board Computer	L29: Integrated Avionics Systems viz. Communication, Base Band, Storage, Positioning and On-Board Computers	Mr. Dinakaran E, DH, COSG / Mr. Prashant P S, DH, SEMG, URSC / ISRO
15:30 - 16:30 Hrs.	Reliability and Product Assurance	L30: Space Systems Reliability and Quality Assurance	Dr. PJVKS Prakasha Rao, Resident Expert, IN-SPACE, Former Director - SIPO, ISRO HQ
16:30 - 17:00 Hrs.	Tea Break		
17:00 - 18:30 Hrs.	Valedictory Function		

How to Apply

Interested applicants can submit their details along with course fee at www.inspace.gov.in.

Who can Apply?

Academicians, Industry Executives, Graduates, Postgraduates and Researchers

Course Director: Dr. Prakasha Rao PJVKS, Resident Expert, IN-SPACe /

Dr. Sushant T. Joshi, Registrar, Chanakya University

Course Coordinator: Mr. Yudhishtir J, Assistant Director, IN-SPACe /

Dr. Ashish Kumar Shukla, Assistant Professor, Chanakya University,

Commencement of Course: 16th November, 2025

Course Duration: November 16 to 21, 2025

Course Venue: Chanakya University Global Campus, Bengaluru (QR code for Location given at the bottom right side of this page)

Course Fee : ₹ 15,000/- + 18% GST = ₹ 17,700/- includes food charges (Non-refundable) (QR code for payment link given at the bottom right side of this page)

Accommodation: Limited accommodation at Course venue is available on request. Payment to be made at the time of check-out. (₹ 1,000 / person / night)

Course participants are advised to report at venue on November 16, 2025, before 14:00 Hrs



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