



**INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY**  
(Declared as Deemed to be University under section 3 of the UGC act 1956)  
Thiruvananthapuram – 695547

## **IIST Ph.D. Programme – January 2018 for Masters Degree holders**

Indian Institute of Space Science and Technology envisions basic and applied research for meeting the national R&D requirements of Science and Technology in general and the Indian Space Programme in particular. The institute provides a vibrant research atmosphere and offers doctoral and post doctoral programmes.

Applications are invited from highly motivated applicants for admission to the Ph.D. Programme starting in January 2018, in the areas given below

- (i) Aerospace Engineering (PAE01)
- (ii) Avionics (PAV01)
- (iii) Mathematics (PMA01)
- (iv) Physics (PPH01)
- (v) External Fellowship Holders for the Departments in Aerospace Engineering, Avionics, Chemistry, Earth & Space Sciences, Humanities, Mathematics and Physics (only for candidates receiving Ph.D. fellowship from agencies such as DST, CSIR, MeITY, NBHM, UGC etc.)

### **Eligibility**

#### **Minimum Qualifications:**

##### **1. Applicants with Master's Degree in Engineering/Technology**

Applicants with Master's Degree in Engineering/Technology must have secured first class or equivalent in the Master's degree. **They must have pursued their Master's degree on the basis of qualified GATE score.** Applicants with Master of Science in Engineering or equivalent from leading foreign Universities with outstanding academic record or Master of Science (by Research) with outstanding academic record may be considered without GATE score. Applicants with Integrated Masters degree (or Dual Degree) in Engineering/Technology from IITs and IISc with minimum CGPA 9.0/10 may also be considered without GATE score. Applicants, who qualified UGC/CSIR/NET-JRF/other similar fellowships, with eligible degrees and meeting the above mentioned GATE score requirements, are particularly encouraged to apply.

**GATE Score:**

Candidates should have secured minimum GATE score of 450 & above for General category, 405 & above for OBC and 225 & above for SC/ST/PD categories.

**2. Applicants with Master's Degree in Science/Humanities**

Applicants must have Master's Degree in the relevant area with first class or equivalent in their Master's degree. They must have qualified UGC/CSIR NET-JRF/JEST or GATE in the relevant disciplines. Applicants applying with their JEST score should have secured a rank within the first 300.

**Age Limit:** Applicant should be below 35 years as on December 16, 2017. Age relaxation is applicable as per Government Rules.

**Nationality:** Applicant should be an Indian citizen.

Results awaited applicants in the final year/semester are also eligible to apply, if they have qualified for GATE/JRF-NET as required. Such applicants may be screened in for Test/Interview based on the marks obtained by them until the current year/semester. Based on their Test/Interview performance, these applicants may be provisionally selected subject to the condition that they have to produce the provisional certificate of obtaining the qualifying degree with required percentage of marks by the date stipulated in their provisional admission letter. If they fail to produce the provisional/ degree certificate by this date, their admission offer will be withdrawn and the offer may be given to next eligible applicant in the waiting list.

In exceptional cases, a provisionally selected applicant may be allowed to join IIST without submitting the provisional/degree certificate on the stipulated date of joining, subject to the conditions that (a) At the time of joining the applicant should have completed all the requirements for the award of the qualifying degree including all examinations, project works and viva voce, (b) The applicant should produce at the time of joining, a Course Completion Certificate issued by the competent authority in the University/Institute specifically confirming that all examinations, project works and viva voce for the qualifying degree are completed, (c) If the above condition is satisfied, the applicant can be given provisional admission with the undertaking that all pending certificates, mark sheets, degree certificates (Original or Provisional) will be submitted to IIST, latest by 30<sup>th</sup> April 2018, failing which the admission stands cancelled. For such applicants who are funded by IIST and provisionally admitted to the IIST Ph.D. Programme as per (c) above, no fellowship is paid during the period before the required certificates are submitted.

However, on regularization of admission following the submission of all required documents before the stipulated date, the applicant will be paid fellowship with retrospective effect from the date of joining.

**Applicants who are employed in Government/Semi Government/PSUs/Autonomous Bodies should produce a “No Objection Certificate (NOC)” from the current employer at the time of Interview.**

<b>Research Areas for January 2018 PhD Admission</b>				
<b>Sl. No.</b>	<b>Department</b>	<b>Department code</b>	<b>Research Area</b>	<b>Eligibility</b>
1	Aerospace Engineering	PAE01	Fluid Dynamics	M.Tech in Mechanical/ Aerospace Engineering or Master of Science in Mechanical/Aerospace Engineering or equivalent
2	Avionics	PAV01	Interface-Electronic circuits for Sensors	M. Tech/M.E/ Master of Science in any of following disciplines Electronics/Instrumentation and Control/Control & Instrumentation/ Instrumentation/ Instrumentation & Signal Processing/ Embedded System/Applied Electronics & Instrumentation/Industrial Instrumentation & Control/ Electronics & Communication Engineering/ Electrical Engineering/ Process Control & Instrumentation/ Signal Processing/ Biomedical Engineering / Control Systems or equivalent.
3	Mathematics	PMA01	Applied Mathematics	M.Sc Mathematics or equivalent.
4	Physics	PPH01	Experimental Condensed Matter Physics	M.Sc./BS-MS/B.Tech Engg. Physics or equivalent.
5	<b>External Fellowship Holders</b> Candidates having fellowship for doing Ph.D. from the funding agencies such as DST, CSIR, MeITY, NBHM, UGC etc may also apply for Ph.D. admission in various departments in IIST in the areas given below.			
<b>Department</b>		<b>Department code</b>	<b>Research Area</b>	
Aerospace Engineering		EAE01	Molecular Dynamics/Nanocomposites	
		EAE02	Wave Mechanics	
		EAE03	Finite Element Methods/ Meshless Methods/ Numerical Methods for Stochastic Differential Equations	
		EAE04	Structural Dynamics/Acoustics	
		EAE05	Laser Absorption Spectroscopy	

	EAE06	Synthesis and Characterization of Nanofuels/Behaviour of Supercritical fluids/Laser Spectroscopy
	EAE07	Computational Fluid Dynamics
	EAE08	Computational Fluid Dynamics/Heat Transfer/Mathematical Methods in Radiative Heat Transfer
	EAE09	Microscale Heat transfer/Computational Fluid Dynamics/Reactive heat flow in high energy materials
Avionics	EAV01	RF and Microwave Engineering
	EAV02	Micro and Nano Sensor
	EAV03	Advanced Control Design for Satellite attitude control
	EAV04	MEMS and Nanoelectronics Sensor Systems
	EAV05	Complex Networks
	EAV06	Power Electronics and Control
	EAV07	Power Electronics and Drives
	EAV08	Computer Science and Engineering
Chemistry	ECH01	Development of smart materials for additive manufacturing.
	ECH02	Polymer nanocomposites for sensor/energy storage applications
	ECH03	Ceramic materials
	ECH04	Analytical Chemistry-nanomaterials based chemical sensors
	ECH05	Design and fabrication of hetero-atom doped graphene based electrochemical biosensor
	ECH06	Inorganic functional materials
	ECH07	Nanocomposites/ nanosensors
	ECH08	Synthesis of Nanofunctional materials for Electrochemical sensing/storage
Earth & Space Sciences	EES01	Geology/Planetary Geosciences
	EES02	Modeling of Atmosphere (Atmosphere Science)
	EES03	Astronomy & Astrophysics
Humanities	EHS01	Cultural Studies
	EHS02	Study of the Marginalized/ Technology and Society
Mathematics	EMA01	Mathematical Theory of Control
	EMA02	Computational Partial Differential Equation
	EMA03	Applied Mathematics (Suspension Rheology)
	EMA04	Machine Learning
Physics	EPH01	Classical and Quantum Optics/Quantum Information/Quantum Dynamics
	EPH02	Device Physics
	EPH03	Nuclear Magnetic Resonance
	EPH04	Optical Information processing/Digital holography/
	EPH05	Nonequilibrium Statistical mechanics
	EPH06	Non destructive imaging
	EPH07	Mass spectrometry in atomic and molecular Physics

Final decision on the eligibility of External fellowships will be taken by IIST.

### RESEARCH FELLOWSHIP:

- 1) Research Fellowship for GATE and UGC/CSIR NET-JRF/JEST qualified students is Rs.25, 000/- per month. (Research Scholars selected with UGC/CSIR NET-JRF shall draw fellowship from the concerned organizations). For all research scholars with external fellowship, the corresponding rules and regulations apply.
- 2) The fellowship will be enhanced based on a performance review after two years of Research.
- 3) The scholars will be required to assist the Departments in tutorials, practical training in labs or similar academic activities normally limited to 6 hours per week.
- 4) The scholars will have to pay fees and charges for the services provided by the Institute like boarding/lodging/medical facilities etc., as per IIST rules.
- 5) For those who receive fellowship from agencies such as DST, CSIR, MeITY, NBHM, UGC etc., the Institute will not bear the fellowship of the student if the same is stopped due to various reasons.
- 6) The Institute is completely residential and will provide accommodation to all the regular Ph.D students.

### FEE STRUCTURE

**To be paid at the beginning of every semester**

SI No	Description	Full Time
1	Tuition Fee/Statutory Semester Fee	1,500/-*
2	Student Amenities Fee	1,350/-
3	Hostel Charges	4,500/-**
4	Establishment Charges	4,000/-
5	Medical Charges	800/-
	<b>Total</b>	<b>12,150/-</b>
6	Registration Fee (One-Time)	1,000/-
7	Thesis Submission Fee (One-Time)	1,000/-
8	Re-Registration Fee (If any)	1,500/-

**Note:**

**\*For SC/ST/PD** Tuition Fee/Statutory Semester Fee has been exempted.

**\*\* For Dining:** Students of Ph.D programmes can purchase food coupons for Canteen Services separately.

## SELECTION PROCEDURE:

- 1) Applications will be received until **December 16, 2017** only through **on-line**.
- 2) From the eligible applicants, a short-listing will be done, taking into account their applicable GATE/NET scores. **Therefore applicants are advised to enter:**
  - i. **GATE score through which Master's Degree has been pursued;**
  - ii. **Best GATE score if the applicant possesses more than one GATE score.**
- 3) Candidates having fellowship from the funding agencies such as DST, CSIR, MeITY, NBHM, UGC etc may also apply for Ph.D. admission in various departments in IIST. Final decision on the eligibility of such fellowships will be taken by IIST.
- 4) Candidates are advised to visit the faculty profile for the areas of research.
- 5) Candidates with the fellowship shall upload the fellowship award letter and a one page write-up about their research plan.
- 6) Based on the research interest and availability of research supervisor, you will be intimated to pay the application fee and will be called for the interview.
- 7) List of short-listed applicants for written test or interview will be displayed in IIST website by **December 19, 2017**.
- 8) Depending on the number of applicants who have applied, the final selection is based on an interview, which will be conducted at IIST, Thiruvananthapuram during **December 27 and 28, 2017**. **In case of very large number of applicants being shortlisted for Ph.D. admission, a written test will be conducted for shortlisted applicants for the interview.**
- 9) Provisionally selected candidates lists will be displayed in the IIST website on **December 29, 2017**.
- 10) Outstation applicants will be reimbursed to and fro sleeper class train fare/bus fare by shortest route from the place mentioned in the application to Thiruvananthapuram, or actual fare paid (whichever is less) for attending the interview. The applicants are advised to make their own arrangements for their stay at Thiruvananthapuram, at their cost.
- 11) Ph.D Admissions are governed by Ph.D Rules and Regulations of IIST. (<https://www.iist.ac.in/academics/rules-regulations>)

## HOW TO APPLY:

- 1) Applications shall be submitted **online** at the IIST website: <http://admission.iist.ac.in>. Applications received online only will be considered.

- 2) The applicants will not be allowed to make any changes in the profile registration once submitted. Hence utmost care should be taken by the applicants while filling the profile.
- 3) Application fee is to the extent of Rs. 600/- per Department (for SC/ST/PD and Women applicants - Rs.300/- per Department). If the applicant is eligible and wishes to apply for more than one Research Area in the same Department, he/she need not have to pay any additional application fee. However, such applicant who wishes to apply for more than one Research Area within the same Department need to indicate his/her choice of Research Areas in the order of his/her preference. The application fee is non-refundable.
- 4) The application fee shall be paid after one day of registration through "SBI Collect" only
- 5) **Applicants who are employed in Government/Semi Government/PSUs/ Autonomous Bodies need to produce a "No Objection Certificate (NOC)" from the current employer at the time of Interview.**
- 6) SC/ST/OBC/Persons with Disabilities (PD) applicants shall upload in the website, the relevant certificate before the prescribed date.

IMPORTANT DATES		
Sl. No.	Event	Date
1	Opening of IIST website for online submission of applications	01/12/2017 - 1000 hrs (Friday)
2	Closing of IIST website for online submission of applications	16/12/ 2017 - 2300 hrs (Saturday)
3	Last Date of Payment of application fee	18/12/ 2017 - 2300 hrs (Monday)
4	Display of shortlisted candidates for Test/Interview	19/12/2017 - 2000 hrs (Tuesday)
5	Interview Dates	27/12/2017 & 28/12/2017 (Wednesday & Thursday)
6	Display of Provisionally selected candidates	29/12/2017 – 2000 hrs (Friday)
7	Classes begins for Ph.D	08/01/ 2018 (Monday)