



भारतीय अंतरिक्ष विज्ञान एवं प्रौद्योगिकी संस्थान

(भारत सरकार, अंतरिक्ष विभाग के तहत स्वायत्त संस्थान)

(वि. अ. आयोग अधिनियम 1956 की धारा 3 के अधीन मानित विश्वविद्यालय घोषित)

वलियमला डाक घर, तिरुवनंतपुरम - 695 547, केरल

Indian Institute of Space Science and Technology

(An Autonomous Institute under Department of Space, Govt. of India)

(Declared as Deemed to be University under Section 3 of the UGC Act, 1956)

Valiamala P. O., Thiruvananthapuram - 695 547, Kerala

RULES, REGULATIONS AND GUIDELINES FOR Ph.D. PROGRAMMES

(Revised on 08. 05. 2018)

May-2018





Indian Institute of Space Science and Technology

Ph.D. Rules and Regulations for scholars

(Revised on 08/05/2018)

| Sl. No. | Table of Contents | Page |
|---------|---|------|
| 1. | Institute and Research Focus | 4 |
| 2. | Ph.D. Programme Categories | 4 |
| 3. | Selection Procedure | 5 |
| 4. | Eligibility | 8 |
| 5. | Age Limit | 9 |
| 6. | Nationality | 9 |
| 7. | Admission and Registration | 10 |
| 8. | Duration | 10 |
| 9. | Research Fellowship | 10 |
| 10. | Support for National Conferences / Seminars / Workshops / Schools | 11 |
| 11. | Accommodation | 12 |
| 12. | Discipline | 12 |
| 13. | Attendance and Leave of absence | 12 |
| 14. | Fee Structure | 14 |
| 15. | Refund Rules for Ph.D. Programme | 15 |
| 16. | Research Supervisor and Doctoral Committee | 15 |
| 17. | Course Work and Evaluation | 17 |
| 18. | Thesis Submission, Evaluation and Award of Degree | 18 |
| 19. | Temporary withdrawal/category conversion from Full Time Ph.D. Programme due to employment | 21 |

1. Institute and Research Focus

Indian Institute of Space Science and Technology (IIST), situated at Thiruvananthapuram is a Deemed to be University under Section 3 of the UGC Act 1956. IIST functions as an autonomous body under the Department of Space, Government of India. The institute is the first of its kind in the country, to offer high quality education at the undergraduate, graduate, doctoral and post-doctoral levels on areas with special focus to space sciences, space technology and space applications.

Research forms a significant part of the goals envisaged for this premier and unique institute. The main aim is to seamlessly integrate research and development with academic and encourage faculty members to carry on research in their respective areas of interest. Research in IIST is built on the foundations of various academic programmes run by the Departments of Aerospace Engineering, Avionics, Chemistry, Earth and Space Sciences, Humanities, Mathematics and Physics. The major theme of our research portfolio is the application of cutting - edge science to generate new technology. The style of research in IIST is both theoretical as well as richly experimental, and the institute is setting up state-of-the-art facilities in all departments to support its research activities. The Institute is focused on strong interdisciplinary and collaborative work both within the various departments and across the various centres of ISRO, which will help to generate excellent technologies responding to the need of local, national and global interest. IIST also explores research collaborations and scientific exchanges with international academic and research organizations.

Research Council (RC), constituted by the Director, IIST, has the mandate to have oversight (monitoring) on research progress and other academic matters of the Research scholars. All such relevant papers will be routed through Dean (R & D) who is the Chairperson of the RC. The RC shall review the rules and regulations periodically and recommend amendments, if any, to the Director, IIST.

2. Ph.D. Programme Categories

The Ph.D. programme is categorized in to two groups:

2.1 Full time Ph.D. Programme

In this programme research scholar pursue research work within the institute or in an identified DoS Centre/Unit on a full-time basis.

Under this Programme there are three categories based on the funding agency

- a) IIST/DoS Funded
- b) Externally Funded/Sponsored
- c) Project Funded

2.2 Part Time Ph.D. Programme

In this programme the research scholar pursue research work on a part-time basis. Under this programme there are three categories

- a) **Internal IIST** — This programme is for employees of IIST, who can be admitted as part time research scholar as per identified selection procedure.
- b) **DoS Sponsored-** This programme is for permanent employees of DoS, who can be admitted as part time researchscholar as per identified selection procedure.
- c) **DoS Sponsored Dual Degree (Masters + Ph.D.)**

This part time Ph.D. programme is for candidates selected for IIST PG Programmes under the DoS sponsored category subject to No Objection from respective ISRO / DoS centre/unit for pursuing Ph.D. The sponsored candidates under this category on completion of the minimum requirements of PG Programme shall be permitted to register and undergo Ph.D. course work during the Masters Programme.

3. Selection Procedure

3.1 Full-time Ph.D. Programmes

3.1.1 IIST / DoS and Externally Funded Programmes

- a) Ph.D. scholars for full time Ph.D. programme will be selected and admitted twice in a year for January-May session and July -December session, based on open advertisement in national news papers and the institute website and identified selection procedure. The total number and area-wise distribution of full-time research scholars to be admitted for each of the two sessions in a year will be determined by the institute.

- b) **(i) Applicants with Master's Degree in Engineering/Technology as their highest qualifying degree:**

For candidates with M.E/M.Tech as their highest qualifying degree, selection to the PhD programme will be based on a written screening test followed by an interview. However, candidates with a valid fellowship such as CSIR/NET-JRF/KSCSTE fellowships and CSIR-NET Lectureship post their ME/M Tech, will be directly called for the interview.

- (ii) Applicants with Master's Degree in Science as their highest qualifying degree**

For candidates applying with their Master's degree in Sciences as their qualifying degree and having a valid score card/certificate in any of the National level eligibility tests listed above, selection to the programme will be based on an interview to be conducted at IIST.

Applicants applying with their JEST score should have secured a rank within the first 300.

Candidates applying with a valid GATE score in a Science discipline, having a minimum score of 500 for General Category (450 for OBC and

350 for SC/ST/PD categories), are exempted from the Ph.D. written screening test conducted by IIST. Applicants having GATE score in Science disciplines less than indicated cut-off above will not be considered for Ph.D. Admission.

(iii) Applicants with Master's Degree in Humanities/Management/Social Sciences as their highest qualifying degree

For candidates applying with their Master's degree in Humanities/Management /Social Sciences as their qualifying degree and having a valid score card/certificate in any of the National level eligibility tests listed above, selection to the programme will be based on an interview to be conducted at IIST.

- c) Candidates having fellowship from the National/State government funding agencies such as DST, CSIR, MeITY, INAE, NBHM, UGC, KSCSTE Fellowship etc may also apply in response to the rolling advertisement. If selected they shall only avail the respective external funding. These applicants will be evaluated in each quarter (January/April/July/October) and join immediately or in the beginning of the regular January/July semester. Students joining in April/October will have to pay the full fee for the applicable semester.
- d) The final selection will be based on a written test / interview.
- e) Applicants awaiting results in the final year/semester are also eligible to apply, if they meet the prescribed eligibility criteria. In such cases, provisional admission will be offered. For confirmation of admission, applicants shall have to produce relevant documents within the specified time, failing which the provisional admission will be considered cancelled.
- f) 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 following conditions:
 - (i) At the time of joining IIST, the applicant should have completed all the requirements for the award of the qualifying degree including all examinations, project works and Viva-Voce.
 - (ii) 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.
 - (iii) 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 30th April for January admission and 31st October for the July admission of the respective year, failing which the provisional admission stands cancelled.

- g) For IIST funded applicants who are provisionally admitted to the IIST Ph.D Programme as per (3.1.1 (e)) above, no fellowship will be 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 above IIST funded applicants will be paid fellowship with retrospective effect from the date of joining.
- h) Full-time research scholars sponsored by DoS will have to fulfil a minimum residential requirement of one semester at the IIST campus, during which period they will undergo course work recommended by the respective Doctoral Committee.

3.1.2 Project Funded Programme

In this category

- a) During the recruitment of the JRF the candidate will be assessed through screening written test cum interview /interview whichever applicable, for the suitability of the Ph.D. programme if it is mentioned in the open advertisement for JRF that, the JRF may be considered for registering for Ph.D. at IIST. The candidate can register immediately or in the beginning of the regular January/July Semester if recommended by the interview panel for Ph.D. admission.
- b) The JRF under a research project may apply for Ph.D. enrolment if the research project with approved funding for a minimum of three years. The applicant will be evaluated through screening written test cum interview/interview whichever applicable, for the suitability of the Ph.D. programme and register immediately or in the beginning of the regular January/July semester if recommended by the selection panel for Ph.D. admission.
- c) Students joining in the mid of the semester will have to pay the full fee for the applicable semester.

3.2 Part-time Ph.D. Programme

3.2.1 DoS Sponsored and Internal – IIST Ph.D. Programmes

- a) Selection of research scholars for part-time Ph.D. programmes will be done twice in a year, for January admission and July admission, through advertisements in the Institute website and official communication to ISRO / DoS Centres/Units.
- b) The Part-time Ph.D. programme is open to scientist/engineers, faculty members working in any of the centres/units of ISRO/DoS including employees of IIST.
- c) Prospective candidates will make an application, duly forwarded to IIST, by their respective unit/centres, giving details of their previous academic record, research experience, and publications, if any, along with a brief summary of the proposed research work and proposed guide from DoS as well as IIST.
- d) All DoS/ISRO Sponsored candidates shall undertake a screening written test in order to qualify for PhD admission interview. The Screening

Written test has one part: Part A (40 marks) with General Aptitude and mathematics syllabus similar to the syllabus of recent GATE Examination. All DoS/ISRO sponsored PhD candidates, will in addition, give a presentation and face an interview for the remaining 60 marks.

- e) Part-time research scholars sponsored by DoS will have to fulfil a minimum residential requirement of one semester at the IIST campus, during which period they will undergo course work recommended by the respective Doctoral Committee. During the Ph.D. programme they should visit IIST every semester and submit the progress report as per the prescribed format to the office of Dean R &D through Supervisor and HoD.

3.2.2 DoS Sponsored Dual Degree (Masters and Ph.D.) Programme

- a. ISRO sponsored candidates applying for the Dual Masters and Ph.D. programme at the time of admission to PG programme, will be interviewed for suitability for Ph.D., and also for MTech/Master of Science.
- b. Switching to the dual Masters and Ph.D. programme can be initiated by the candidate after the 1st or 2nd semester results are declared by submitting a sponsorship letter (if not submitted already) and proposing names of supervisors (from IIST and from respective ISRO centre) and broad research area. They will also be interviewed for their suitability to the Ph.D. programme.
- c. The sponsored candidates under this category on completion of the minimum requirements of PG Programme shall be permitted to register and undergo course work. Other rules are same as those of sponsored part time Ph.D.

4. Eligibility for Ph.D. Admission

4.1. Minimum Qualification

4.1.1. Applicants with Master's Degree in Engineering/Technology as their highest qualifying degree:

Applicants with Master's Degree in Engineering/Technology must have secured 65% marks or 7.00 CGPA or equivalent in the Qualifying Master's degree (60% marks or 6.50 CGPA for OBC, 55% marks or 6.00 CGPA for SC/ST/PD). They must have pursued their Master's degree on the basis of qualified GATE score. However there is no GATE cut off score for applicants with M.Tech/M.E as the highest qualifying degree, who are applying for Ph.D. in Engineering Discipline. Applicants with Master of Science in Engineering or equivalent from leading foreign Universities with outstanding academic record may be considered without GATE score.

4.1.2 Applicants with Master's Degree in Science as their highest qualifying degree:

Applicants must have Master's Degree in the relevant area with a minimum of 65% marks or 7.00 CGPA or equivalent in the Qualifying Master's degree (60% marks or 6.50 CGPA for OBC, 55% marks or 6.00 CGPA for SC/ST/PD). They must have cleared a National level eligibility test, such as a valid UGC-CSIR-NET-JRF/Lectureship/KSCSTE fellowship or NBHM/JEST/GATE, in the relevant disciplines.

4.1.3 Applicants with Master's Degree in Humanities/Management/Social Sciences as their highest qualifying degree

Applicants must have Master's Degree in the relevant area of Humanities/Management / Social Sciences with a minimum of 65% marks or 7.00 CGPA or equivalent in the Qualifying Master's degree (60% marks or 6.50 CGPA for OBC, 55% marks or 6.00 CGPA for SC/ST/PD). They must have cleared a national level eligibility test, such as a valid UGC-NET-JRF or KSCSTE fellowship and similar fellowship schemes of Central/State Governments.

4.1.4 Part-time Applicants from IIST and DoS centres/units:

Applicants must have Masters degree with a minimum of 60% marks or CGPA 6.5 out of 10. The applicants should have a minimum of 3 years research experience.

4.1.5 DoS Sponsored Dual Degree (Master's and Ph.D.) Programme applicants

Applicants should secure a minimum 8 (in a scale of 10) CGPA in courses up to and including the semester during which the application is made. Even after admission to Ph.D. programme, 8 CGPA has to be obtained in all MTech/Master of Science theory and lab courses taken together.

5 Age Limit

Applicant should be below 35 years as on the last date of closing of application (as per the advertisement) for full-time scholars. Part-time scholars from IIST and DoS centres/units should be below 48 years as on the last date of closing of application (as per the advertisement) and 46 years for M.Tech & PhD Dual Degree.

Age Relaxation as per government of India norms will be applicable to specific categories of applicants.

6 Nationality

Applicants should be Indian citizens.

7 Admission and Registration

- a) Applicants whose selection is approved by the Director, IIST will be admitted to the Ph.D. programme by duly undergoing the process of admission and registration in the respective academic departments on the dates specified in the communication to the selected candidates.
- b) All the Ph.D. students (Full time and part time) are required to register every semester along with the progress report in the prescribed format.
- c) The registration lapses if the candidates do not complete the Ph.D. requirement in the maximum stipulated period. Re-registration will be required for such candidates subject to specific approvals and payment of the re-registration fee.

8 Duration

| Category | Normal Duration | | Extension (with approval) |
|-----------|-----------------|------------|---------------------------|
| | Minimum | Maximum | |
| Full-time | Three years | Four years | Up to Six years |
| Part-time | Three years | Five years | Up to Seven years |

Beyond the normal duration, in exceptional and genuine cases, the Research scholars can apply for an extension up to one year at a time, for the submission of the thesis. Based on the recommendation of the Doctoral Committee (DC) on the progress of the research work, and the endorsement of the Research, Director, IIST may approve extension for submission of thesis.

Beyond the duration of six years for full-time scholars, and beyond the duration of seven years for part-time scholars, no further extension for the submission of the thesis can be granted, and the candidacy will be terminated. Re-registration is granted for exceptional cases upon strong recommendation from the DC on the basis of adequate reasons for delay. Re-registration fee amounting to Rs. 1500/- will be charged at the time of Re-registration.

9 Research Fellowship

9.1 Full-time Programmes

9.1.1 IIST Funded

- a) All research scholars Selected under IIST funded Ph.D. fellowship will receive Institute fellowship following DST Guidelines (and upon DOS approval) for emoluments for research personnel pursuing Ph.D. in Central Government Departments/ Agencies. As per current norms, scholars with Masters Degree in Engineering/Technology and scholars with Masters degree in Science or Humanities with NET-JRF or Gate qualification will be given a Fellowship of Rs.25000/pm. scholars with

NET – Lectureship from the Sciences and Humanities are given a Fellowship of Rs.25000/pm and Rs 12000/pm, respectively. scholars with NET–Lectureship in Humanities will be given a Fellowship of Rs.25000/pm, if the scholars qualify for NET-JRF. All the Fellowship amounts shall be revised from time-to-time as per Government norms.

- b) After two years of research experience, their performance will be evaluated by the respective DC and a Department level committee constituted by the HoD. Based on the review, fellowship amount of Rs. 25000/12000 may be enhanced to Rs.28000/14000, respectively.
- c) Fellowship shall be for a period of 4 years. Under exceptional circumstances with the recommendation of DC and evaluation of RC extension up to maximum of twelve months could be granted. Fellowship is tenable till submission of thesis or maximum period whichever is earlier.
- d) The scholars will be required to assist the Department in academic activities minimum of 6 hours per week.

9.1.2 Externally Funded / Sponsored and Project Funded

- a) All research scholars selected under externally funded and project funded Ph.D. fellowship will receive their fellowship as per the norms of their funding agencies. The duration of fellowship for such Ph.D. scholars will be till the time funding agencies provide them the fellowship. The institute will not assume any financial responsibility for continuation of fellowship on completion of the fellowship / project tenure.
- b) After two years of research experience, their performance will be evaluated by the DC and a Department level committee constituted by the HoD and enhancement of their Ph.D. fellowship will adhere to the prescribed norms of the funding agencies.
- c) The scholars will be required to assist the Department in academic activities minimum of 6 hours per week.

9.2 Part-time Programmes

- a) Part-time research scholars (from IIST and from DoS centres/units) will not receive any Research Fellowship in addition to their applicable emoluments as DoS employees.
- b) The scholars will be required to assist the Department in academic activities minimum of 6 hours per week.

10 Support for Conferences / Seminars / Workshops / Schools (National)

10.1 Full-time Programmes

10.1.1 IIST Funded :

Research scholars may be supported for Conferences / Seminars / Workshops / Schools within the country once per year (as per enrolment) subject to approval by Director, IIST. After the first two years, it is mandatory to have a paper / poster presentation in conferences in order to avail support from IIST.

10.1.2 Externally Funded / Sponsored and Project Funded

Research scholars may be supported for Conferences / Seminars / Workshops / Schools as per contingency funds specified by the funding agencies.

10.2 Part-time Programmes

Research scholars under this category shall apply to their respective DoS centre/unit for funding to attend Conferences / Seminars / Workshops / Schools.

11 Accommodation

11.1 Full-time Programme

a) IIST Funded

The institute is residential to all Research scholars under this category. Only married students who opt to stay outside will be provided HRA. The research scholars are expected to be on-campus for the entire duration of the Ph.D. programme. Students under the above category will have the highest priority for hostel accommodation.

b) DoS Funded

Students under this category are eligible for hostel accommodation during their course work, visits and Research work as applicable

c) Externally Funded / Sponsored and Project Funded

scholars availing HRA from the funding agencies may opt to stay outside. Students under the above category will have the second priority for hostel accommodation.

11.2 Part-time Programme

Students under this category are eligible for hostel accommodation during their course work, visits and Research work as applicable subject to availability.

12 Discipline

- a) Every scholar is expected to maintain highest standards of academic integrity.
- b) Every scholar is required to observe disciplined and decorous behaviour both inside and outside the campus and should not indulge in any activity, which will tend to bring down the reputation of the Institute.
- c) Any act of indiscipline by the scholar reported to any authority of the Institute will be referred to the Disciplinary Committee of the Institute.
- d) The Committee will investigate the charge and recommend suitable punishments, if it finds the charges substantiated. Director, IIST will take necessary action based on the recommendation of the Disciplinary Committee.

13 Attendance and Leave of absence

- a) All full time research scholars are eligible for thirty days leave of absence in a year subject to a maximum of fifteen days in a semester (01st July - 31st Dec & 01st Jan – 30th June) including absence on medical grounds. The scholars can avail leave after recommendation from the supervisor/co-supervisor and

approval from the concerned HOD. Maternity leave as per Government of India instructions issued from time to time would be available. The scholars shall sign in the attendance register on all working days.

- b)** Part Time Ph.D. scholars from ISRO/DoS Centres shall sign in the attendance register on all working days during the period of their residential requirement at IIST Campus and shall be eligible for leave regulations as per Full Time Research scholars.

14 Fee Structure

| Category | Registration Fee at admission | Tuition Fee* (per semester) | Hostel Fee (per semester) | Student Amenity Fee (per semester) | Establishment Fee (per semester) | Medical Fee (per semester) | Thesis Submission Fee |
|------------------------------|-------------------------------|-----------------------------|---------------------------|------------------------------------|----------------------------------|----------------------------|-----------------------|
| Full-time Programmes | | | | | | | |
| IIST Funded | Rs. 1000 | Rs. 1500 | Rs. 4500 | Rs. 1350 | Rs. 4000 | Rs. 800 | Rs. 1000 |
| Externally Funded/ Sponsored | Rs. 1000 | Rs. 1500 | Rs. 4500 | Rs. 1350 | Rs. 4000 | Rs. 800 | Rs. 1000 |
| Project Funded | Rs. 1000 | Rs. 1500 | Rs. 4500 | Rs. 1350 | Rs. 4000 | Rs. 800 | Rs. 1000 |
| Part-time Programmes | | | | | | | |
| Internal IIST | Rs. 1000 | Rs. 1500 | NA | Rs. 1350 # | Rs. 4000 # Rs. 2000 ## | NA | Rs. 1000 |
| DoS Sponsored | Rs. 1000 | Rs. 1500 | Rs. 4500# | Rs.1350 # | Rs. 4000 # Rs. 2000 ## | NA | Rs. 1000 |
| DoS Sponsored Dual Degree | Rs. 1000 | Rs. 1500 | Rs. 4500# | Rs. 1350 # | Rs. 4000 # Rs. 2000 ## | NA | Rs. 1000 |

**Tuition fee will be waived for candidates under SC/ST category.*

During residency period only

Beyond the residency period

15 Fee Refund Rules

If a Ph.D. scholar wishes to withdraw from the programme of study, Institute shall follow the below refund of fee guideline

| Sl.No | Percentage of Refund Aggregate Fees | Point of time when notice of withdrawal of admission is served to Higher Education Institute |
|-------|-------------------------------------|--|
| 1 | 100% | 15 days before the formally-notified last date of admission |
| 2 | 80% | Not more than 15 days after the formally-notified last date of admission |
| 3 | 50% | More than 15 days but less than 30 days after formally-notified last date of admission |
| 4 | 0% | More than 30 days after formally-notified last date of admission |

**(Inclusive of course fees and non-tuition fees but exclusive of caution deposit)*

In case of 1 in the table above, the Institute shall deduct an amount not more than 10% of the aggregate fees as processing charges from the refundable amount.

16 Research Supervisor and Doctoral Committee

16.1 Research Supervisor

- a) For each full-time research scholar, an IIST faculty member of the enrolling Dept. will function as the Ph.D. supervisor. For project funded Research scholars, the Project Investigator (PI) of the project shall function as the supervisor and the Co-PI (from IIST) may be considered as Co-Supervisor with prior approval from the RC.
- b) For Part-time Research scholars from DoS centres/units, in addition to the Internal Ph.D. Supervisor from IIST faculty, an External (DOS) Supervisor from the respective DoS centre /unit shall also be identified and approved by the RC.
- c) For recognition as a Ph.D. Supervisor, the minimum prescribed norms are as follows
 - (i) The Supervisor should have a Ph.D degree.
 - (ii) The Supervisor should have at least 2 years of post Ph.D- research experience.
 - (iii) The supervisor should have completed one year of residency as faculty member in IIST

- (iv) The Supervisor from IIST should have minimum 3 published papers in Journals of international repute while the supervisor from ISRO/DoS should have experience in leading an established research team.
- d) The total number of scholars registered for the Ph.D. Degree under a supervisor shall not exceed the limits specified by UGC.

16.2 Doctoral Committee

- a) Within **one month** of the joining date of the Research Scholar a separate Doctoral Committee (DC) will be proposed by the Supervisor along with HoD of the department and submitted to the RC in the prescribed format for approval. After approval, Dean (R & D) communicates constitution of the DC to the members.
- b) The Doctoral Committee, based on research problem and the scholars academic background, will approve the specific course work for the Scholar.
- c) The Doctoral Committee will annually evaluate the progress of the Research Scholar based on work report and presentation and will recommend on any mid course corrections needed.
- d) The composition of the DC shall be the following and have at least four members

| | | |
|----|---|-------------|
| 1. | HoD of the department or a senior Faculty member from Dept. chosen by the HoD in consultation with the Supervisor | Chairperson |
| 2. | One faculty member from the Dept. with similar / overlapping research interests | Member |
| 3. | One faculty from another Dept. of IIST | Member |
| 4. | One Expert in the Area from outside IIST* | Member |
| 5. | Supervisor | Convener |

* *Optional*

17 Course Work and Evaluation

17.1 Course Work

- a) The respective Supervisors, after approval from the DC and duly signed by the HoD, shall submit the course work details to Dean (R&D) and Dean (Acad) in the prescribed format for the Ph.D. course work registration within two months of the joining date of the Research Scholar.
- b) All research scholars are required to credit two compulsory courses, namely (i) Research Methodology, and (ii) Mathematical Methods, each of 3 credits. The Research Methodology course is common to all

scholars. The Mathematical Methods course can be either (a) a standard basic Mathematics course for Scientist and Engineers, or, (b) an advanced Mathematics course with a specified syllabus meeting the specific requirement of the Scholar. Research scholars in Humanities have the option to take, in lieu of the compulsory mathematics course, a foreign language course or a course suggested by the DC offered in the Humanities Department.

- c) If a particular DC recommends a specialized course in lieu of the mandatory Mathematical Methods course, the same may be approved.
- d) In general, the minimum course work will be of 12 credits. These minimum course requirements include the compulsory courses. If necessary, courses can be of the nature of self-study courses, under the close guidance of the identified faculty members.
- e) The Scholar has to secure a minimum C grade (7 on a scale of 10) in all the registered courses.
- f) The Course Work grades are to be submitted to the offices of the Dean (R & D) and Dean (Academic) by the Supervisor in the prescribed format.
- g) The research scholars under the DoS Sponsored Dual Degree (Masters and Ph.D.) programme are required to credit the mandatory courses, in addition to the MTech/Master of Science courses recommended by the Doctoral Committee. The minimum course work will be of 12 credits. The student can register for Ph.D. courses, starting from 2nd semester, and also in 3rd and 4th semesters, provided sufficient number of MTech/Master of Science project credits are completed by utilizing summers after 2nd and 4th semesters, if needed. The MTech/Master of Science project defence cannot be clubbed with Ph.D. comprehensive examination.

17.2 Evaluation

17.2.1 Comprehensive Examination

Before one month of completion of First year, Research Supervisor along with Chairman DC should initiate to conduct Comprehensive Exam which consists of written exam, Presentation and Viva-Voce/ presentation and Viva-Voce whichever is recommended by Research Supervisor in concurrence with HOD.

The syllabus of the comprehensive exam should be communicated to Ph.D. scholar one month prior to the exam. Grades of written exam and viva/Viva-Voce should be submitted separately in the prescribed format available in the IIST website to office of Dean (R&D).

A satisfactory Grade (above 60%) in the comprehensive exam makes a candidate eligible for Ph.D. registration in IIST. If the comprehensive

exam is not held within 12 months of joining the institution, necessary approval has to be taken from Dean (R&D) by furnishing proper justifications. If the Grade in the comprehensive exam is not satisfactory then a second comprehensive exam should be held within six months after 1st comprehensive exam. The candidacy will be considered terminated if the Scholar does not clear the examination in two attempts.

17.2.2 Annual Evaluation

- a) The research scholar has to submit his / her Research work Progress report twice a year (in the month of June and December) to the DC and the HoD, through the Supervisor.
- b) The Doctoral committee will meet once in every 12 months to review the research progress of the scholar. The Scholar will be asked to submit a detailed work report and to present his /her work to the DC during the annual review. Minutes of the Annual Review Meeting along with progress in the prescribed format should be submitted by the Supervisor to the office of the Dean (R&D) forwarded through the HoD. The comments / suggestions / inputs of the DC shall be communicated to the Research Scholar by the Supervisor.
- c) If the progress of Research Scholar is rated as unsatisfactory in two consecutive Annual evaluations during the period of Ph.D programme, the Ph.D. registration of the candidate will be terminated by the Director, IIST based on the recommendation of the Research Council.

18 Thesis Submission, Evaluation and Award of Degree

18.1 Thesis Submission

- a) Research scholars can submit the thesis after a minimum of three years from the initial date of enrolment for the Ph.D. Programme.
- b) At least two papers must be published /accepted for publication in refereed journals of repute. The concerned Doctoral Committee will have the authority to decide upon the quality of journal, standard of publications and its equivalence.
- c) DoS Sponsored Dual Degree (Masters and Ph.D.) Programme scholars cannot show MTech/Master of Science thesis results as part of Ph.D. work, as he/she has already reported it in MTech/Master of Science thesis based on which a degree has been awarded. The thesis results can be cited as a work done before Ph.D..
- d) **Pre-synopsis Seminar** :Prior to the thesis submission and synopsis thereof, the DC shall make a comprehensive assessment of the research work via a Pre-synopsis Seminar and Viva-Voce by the research scholar. This seminar shall be open to all in the institute through adequate notification by the Supervisor.
- e) The Pre-synopsis evaluation report by the DC will be submitted by the Supervisor, in the prescribed format, to the Offices of the Dean (R & D) and Dean (Academic) duly forwarded by the HoD. The evaluation sheet shall also contain the confirmed title of the thesis.

- f) Synopsis Submission:** Within 10 days after the successful completion of the Pre-synopsis seminar, the candidate shall submit through the HoD, 2 soft bound hard copies of synopsis along with soft copy to the office of Deputy Registrar (Academics) with a copy to the office of the Dean(R&D). Deputy Registrar (Academics) after verification of necessary details handover the synopsis to the office of Dean(Academics) for further proceedings. The length of the Synopsis generally can be between one to two thousand words (five to ten pages including tables and figures, if any). It should contain the Title, a Brief Statement of the Research Problem, Motivation, Objectives and Scope of the Research work, Methodology Adopted, a Brief Summary of the Mathematical Model and/or Experimental Set up, Summary of the Research Findings, List of Publications from this Research Study and Proposed Content of the Thesis.
- g) Panel of Examiners:** The DC of the Ph.D. candidate shall recommend a panel of 8 internationally renowned researchers (4 from within India and 4 from outside India) as external examiners for thesis evaluation. The details of the examiners in the prescribed format should be sent to the office of Deputy Registrar (Academics), with a copy to the office of the Dean (R&D) in closed CONFIDENTIAL cover within 10 days of successful completion of pre synopsis evaluation. Deputy Registrar (Academics) handover the CONFIDENTIAL COVER to office of Dean(Academics) for further processing.
- h) Thesis submission:** Five soft bound hard copies of the thesis shall be submitted to the Office of Deputy Registrar (Academics), through respective HoD, within a period of three months from the date of successful completion of pre-synopsis evaluation. The thesis shall include a certificate from the Supervisor(s) to the effect that the thesis is a record of the bonafide research work carried out by the research scholar under his/her supervision and guidance and that the work reported in the thesis has not been submitted elsewhere for any other degree. A summary of the guidelines for preparation of the thesis is given in the Appendix. Detailed templates can be downloaded from the Institute Website From the day of submission of thesis; the fellowship will be discontinued for the candidate. Deputy Registrar (Academics) after verification of necessary details handover the thesis to office of Dean(Academics) for further processing.
- i) Research scholars shall vacate the hostel room within one month from the date of submission of their Ph.D Thesis.**

18.2 Evaluation

18.2.1 Thesis Evaluation

- a)** From the submitted panel of external examiners, the Director, IIST or his nominee will choose five names in order of preference.

- b) The Synopsis of the thesis will initially be sent to first two examiners. The third, fourth and or fifth examiners are subsequently invited in that order as alternatives, if one or more of the first two examiners indicate their non-availability to examine the thesis.
- c) After receiving acceptance from the two examiners, Dean (Academic) will mail the thesis to the examiners for their evaluation.
- d) The examiner is expected to send the report on the thesis within two months from the date of receipt of the thesis.
- e) In case of undue delay in receiving the evaluation report, the Dean (Academic) shall appoint another examiner from the panel, for evaluating the thesis.
- f) If an examiner suggests resubmission of the thesis after revision, the Research Scholar will be allowed to resubmit the thesis within the time stipulated by the DC.
- g) If one of the two thesis examiners declares the thesis as not recommended, the thesis shall be referred to a third examiner from the panel for the evaluation.
- h) If two examiners, after referral to a third examiner, if necessary, report the thesis as not commended, the registration of the candidate shall stand cancelled.
- i) If reports of two examiners, after referral to a third examiner, if necessary, declare the thesis as 'recommended' the DC will consider the reports and recommend for the conduct of Viva-Voce Examination.

18.2.2 Viva-Voce Examination

- a) The Viva-voce Examination shall be conducted on receiving suitable recommendation from the examiners. A Viva-Voce board shall be constituted by the Dean (Academic) with approval from Director, IIST. The board shall comprise of the following

| | | |
|----|--|-------------|
| 1. | DC Chairperson | Chairperson |
| 2. | One of the Examiners of the Thesis nominated by the Director | Member |
| 3. | Ph.D. Supervisor | Convener |

- b) The Viva-Voce shall be conducted in the Institute and shall be open to all through adequate notification by the Supervisor. The DC members will be invited to the open Viva-Voce Examination. The Research Scholar will give a presentation of the thesis.
- c) The Viva-Voce Board shall (i) examine the thesis (ii) examine if necessary modifications suggested by the thesis examiners have been incorporated (iii) elicit the candidate's replies to the questions raised by the thesis examiners (iv) authenticate the work as the candidate's own (v) judge the presentation of the work by the candidate and the answers to the questions asked in the open Viva-Voce presentation and (vi) submit a report of the examination in the prescribed format.

- d) If the Viva-Voce Board declares the performance of the research scholar as not satisfactory, he/she may be asked to reappear for Viva-voce Examination again at a later date (not earlier than three months and not later than six months from the date of the first Viva-Voce).

18.3 Award of Degree

On successful completion of the Viva-Voce Examination,

- a) Soft copy of the thesis should be submitted to Dean (academics) through Supervisor for digital archive (inhouse as well as inflibnet).
- b) It is required to submit four corrected hard bound copies of the Thesis.
- c) The Research Scholar will be awarded a Provisional Ph.D. Degree. The Ph.D. Degree will be awarded with the approval of the Board of Management in the next subsequent Convocation of the Institute.

19 Temporary withdrawal/category conversion from Full Time Ph.D. Programme due to employment

- a) Any registered full time research scholar is permitted to take up a job and return with study leave to complete his/her Ph.D. programme if he/she meets the requirements as indicated below
- b) Candidates should have completed his/her course work as recommended by the DC.
- c) Candidates should have completed his/her Comprehensive examination successfully.
- d) Candidates should satisfy a minimum residency period of two years.
- e) The DC should critically assess the progress of the research scholar and give the recommendation of the minimum time required for completion of his/her Ph.D. work.
- f) The research scholar will be permitted to be away from the Institute for a maximum period of 1 year (or two semesters, whichever is less) to obtain necessary clearances (leave) from the employer.
- g) Research scholars will be permitted to leave the Institute once his/her synopsis is accepted.
- h) The candidate has to submit the thesis within six months from the date of submission of the synopsis.
- i) The research scholar will be given Institute fellowship if the student is an IIST funded fellow after re-joining subject to the condition that he/she shall not be receiving any salary or any other kind of financial assistance from the employer and the overall period of fellowship shall not exceed five years in any case
- j) If a research scholar joins DOS and unable to get leave from the employer due to probation etc. then in such cases employer should certify that the new place of work has adequate facilities to continue with the Ph.D. research work and the organization will facilitate the candidate to finish the Ph.D. programme. Such candidates will be considered as part time Ph.D. scholar.



भारतीय अंतरिक्ष विज्ञान एवं प्रौद्योगिकी संस्थान

(भारत सरकार, अंतरिक्ष विभाग के तहत स्वायत्त संस्थान)

(वि. अ. आयोग अधिनियम 1956 की धारा 3 के अधीन मानित विश्वविद्यालय घोषित)

वलियमला डाक घर, तिरुवनंतपुरम - 695 547, केरल

Indian Institute of Space Science and Technology

(An Autonomous Institute under Department of Space, Govt. of India)

(Declared as Deemed to be University under Section 3 of the UGC Act, 1956)

Valiamala P. O., Thiruvananthapuram - 695 547, Kerala