

# Indian Institute of Information Technology Kalyani

An Institute of National Importance

(Autonomous Institution under MOE, Govt. of India & Department of Information Technology & Electronics, Govt. of West Bengal)

WEBEL IT Park, 14, Adivasi Para, Opposite of Kalyani Water Treatment Plant

Near Buddha Park, Dist. Nadia, P.O. Kalyani - 741235, West Bengal.

Email-office@iiitkalyani.ac.in, website-www.iiitkalyani.ac.in

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Advt. No. IIITK/Acad/Phd/24-25/52

Date:01.05.2024

## Ph.D. Admissions 2024 - 2025 (Autumn Semester)

Applications are invited from eligible Indian Nationals for admission to the Doctor of Philosophy (Ph.D.) programme in the Spring Semester, 2024 - 2025. This programme will be offered in Computer Science and Engineering (CSE), Electronics and Communication Engineering (ECE), Mathematics and Physics (Space and Atmospheric Sciences). Admissions are offered in the following categories:

### **i) Research Fellow:**

No. of vacancy: Unreserved: 27, SC:08, ST:04, OBC:15, EWS:05

- Fellow with confirmed fellowship (NET/INSPIRE, etc.):** A student with confirmed fellowship from any recognized funding agency may apply in this category. The student has to devote **full-time** in research and help in the teaching process of the Institute.
- Institute Teaching Assistantship:** A student without any fellowship, may apply for Teaching Assistantship (TA) @25,000/- per month which may be available for a period of a maximum of 05 years. All the students in this category is required to provide service of atleast 06 hours per week as teaching assistant in theory and/or laboratory courses.

**ii) Sponsored:** A student may be sponsored by a recognized R&D organization, academic institution, government organization or industry for doing research in the Institute on a **full-time** basis. He/she must be a regular employee of the sponsoring organization with at least two years of professional experience in the respective field.

**iii) External:** A student should be employed in an R&D organization/academic institution of national repute/industry having adequate research facilities. The research work leading to the Ph.D degree may be carried out largely in the parent organization of the candidate under a Local Supervisor from the organization but with the overall guidance provided by a faculty member (Institute Supervisor) of the Department/Centre in which he/she is registered. Such a candidate will have to complete the course work and other requirements of the Institute and will have to take official withdrawal after completion of the requirements to continue work in his/her parent organization.

### **iv) Part-time:**

A student be a professionally employed person who pursues the Ph.D programme while continuing the duties of his/her service. He/she must be a regular employee of that organization with at least **two years** of professional experience in the respective field.

**v) Project Staff:** A student should be working on a sponsored project at IIIT Kalyani. The remaining duration of the project at the time of admission should be at least one year.

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## List of Research Domain:

| Discipline  | Research Domain   |  |   |   |
|-------------|---|--|---|---|
|             | Full-time (Institute Scholarship)   | Full-time (Other Scholarship)  | Part-time   | External  |
| Mathematics | Mathematical Modeling, Mathematical Biology   | Mathematical Modeling, Elastodynamics, Mathematical Biology  | NIL   | Mathematical Modeling                           |
| ECE         | 5G Antenna Design, Microwave Passive Components, Federated Learning Based Blockchain security, Integrated Sensing and Communication for 5G/6G, Post-quantum Cryptography-Codebased and Lattice Based, RISC-V Processor and Co-Processor Development for Low Power IoT development (FPGA and ASIC) | Fabrication of Bio and Gas sensors, Supercapacitors and Battery, Flexible Bio-electronics, AI-ML in sensing, Wireless Communication in the Physical Layer, 5G Antenna Design, Microwave Passive Components, Federated Learning Based Blockchain security, Integrated Sensing and Communication for 5G/6G, Post-quantum Cryptography-Codebased and Lattice Based, RISC-V Processor and Co-Processor Development for Low Power IoT development (FPGA and ASIC), 5G and Beyond, IoT based Embedded System, AI in Wireless Communication | Wireless Communication in the Physical Layer, Federated Learning Based Blockchain security, Integrated Sensing and Communication for 5G/6G, Post-quantum Cryptography-Codebased and Lattice Based, 5G and Beyond, IoT based Embedded System, AI in Wireless Communication, Fabrication of Bio and Gas sensors, Supercapacitors and Battery, Flexible Bio-electronics, AI-ML in sensing, | 5G Antenna Design, Microwave Passive Components |
| CSE         | Coding Theory, Cryptography, Blockchain, Communication Signal Processing, Natural Language Processing,  | Coding Theory, Cryptography, Blockchain, Communication Signal Processing, Information/Network  | Federated Learning Based Blockchain security, Integrated Sensing and Communication for 5G/6G, Post-quantum  | NIL   |

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|         |  |   |   |     |
|---------|--|---|---|-----|
|         | Information/Network Security, IoT & Blockchain Security, Federated Learning Based Blockchain security, Integrated Sensing and Communication for 5G/6G, Post-quantum Cryptography-Codebased and Lattice Based, Steganography/Steganalysis, Quantum Computing and Quantum Machine Learning , Quantum Cryptography, AI and Data Science | Security, IoT & Blockchain Security, Federated Learning Based Blockchain security, Integrated Sensing and Communication for 5G/6G, Post-quantum Cryptography-Codebased and Lattice Based, Computer Vision and Image Understanding, Computational Topology, Steganography/Steganalysis, Quantum Computing and Quantum Machine Learning , Quantum Cryptography, AI and Data Science | Cryptography-Codebased and Lattice Based, Steganography/Steganalysis, Quantum Computing and Quantum Machine Learning , Quantum Cryptography, AI and Data Science, Computational linguistics |     |
| Physics | Space and Atmospheric Sciences   | Space and Atmospheric Sciences, Application of Machine Learning in Atmospheric Sciences   | NIL   | NIL |

**ELIGIBILITY CRITERIA:** For admission to the Ph.D. Programme in various disciplines a candidate must satisfy the following criteria:

**For Engineering Disciplines:** One of the following criteria be satisfied:

1. Master's degree in Engineering/Technology in a relevant area with a minimum CGPA of 6.5 (in a 10 grade point scale) or 60% of marks.
2. Bachelor's degree in Engineering/Technology in a relevant area with a minimum CGPA of 7.5 (in a 10 grade point scale) or 70 % of marks. The candidate should be GATE/NET qualified.

**For Science Disciplines:**

Master's degree in Science in a relevant area with a minimum CGPA of 6.5 (in a 10 grade point scale) or 60% of marks. The candidate should be GATE/NET qualified.

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Mere fulfilment of eligibility criteria does not ensure an applicant's right to admission in the Ph.D programme. The decision of the selection committee will be final in this regard. Reservations will be applicable as per MoE, Govt. of India norms.

## **APPLICATION PROCEDURE:**

Interested candidates are requested to apply by **filling up and submitting [Google form available here \(https://docs.google.com/forms/d/e/1FAIpQLSfz\\_SibjUjFNcSXwovk5Bk9LYJiSIWTLb\\_YFwVPSrwJCZUu0w/viewform?usp=sf\\_link\)](https://docs.google.com/forms/d/e/1FAIpQLSfz_SibjUjFNcSXwovk5Bk9LYJiSIWTLb_YFwVPSrwJCZUu0w/viewform?usp=sf_link) along with the PhD application form available on IIT Kalyani website ([http://iiitkalyani.ac.in/images/PhD\\_Application\\_form\\_2024.docx](http://iiitkalyani.ac.in/images/PhD_Application_form_2024.docx))**. The candidate should also **send the hard copy of the application form duly signed and completed in all respect** (with self attested copy of all certificates/relevant documents and proof of online transfer of application fees) to the institute address preferably through speed post/courier. Templates for no-objection certificates are available in **Annexure I** of the application form. Candidates are requested to check the form submission guideline available on institute's website before filling up the form. Candidates are also requested to subscribe the envelope with "**Application for Ph.D. Admission (Autumn 2024)**". The Institute reserves the right not to fill any or all the positions for Ph.D. program.

## **Application Fees:**

Application fees of Rs. 500/- (Rupees five hundred only) [Rs. 300/- (Rupees three hundred only) for SC/ST/EWS] (Non-Refundable) should be paid (before submitting the Google form) through online transfer in the bank account of IIT Kalyani (details given below). Reference no. of bank transaction should be mentioned in the specified section of the application form.

## **Bank Detail:**

A/c Name: Indian Institute of Information Technology, Kalyani

Bank Name: State Bank of India

A/c No: 33984361509

IFSC Code: SBIN0006701, MICR Code: 700002332

## **Hard copy should be sent to the following Address:**

The Registrar,

Indian Institute of Information Technology Kalyani,

14, Adivasi Para, Webel IT Park (Near Buddha Park),

Kalyani – 741235. Nadia, West Bengal

## **SELECTION PROCEDURE:**

1. Admission will be made based on the fulfillment of eligibility criteria and performance in the written test and/or interview. The first round of shortlisting will be based on applications received within **04.06.2024**.
2. The candidates are requested to visit the Institute's website for the date of the interview.

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## **Important Dates:**

Last date of application: **04.06.2024**

Publication of candidate list selected for test/interview: **10.06.2024** (tentative, check institute website)

Written test and/or interview: Between **18.06.24 – 21.06.24** (tentative, will be declared on Institute website)

Registrar