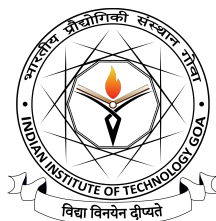


PhD

Admissions

Information Brochure | Spring Semester 2023-24



Academic Office
Indian Institute of Technology Goa

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01. Eligibility criteria for Ph.D. admission

a. Full-time Ph.D. program

- i. Applicants must have one of the following in appropriate subject areas.
 1. Master's Degree in Engineering/Technology or equivalent degree with 60% marks or CPI 6/10 or equivalent. (55% marks or CPI 5.5/10 or equivalent for SC/ST).
 2. Bachelor's degree or equivalent degree in Engineering/Technology with 70% marks or CPI 7/10 or equivalent. (65% marks or CPI 6.5/10 or equivalent for SC/ST).
 3. Master's degree in science, arts, social sciences, or equivalent degree with 60% marks or CPI 6/10 or equivalent. (55% marks or CPI 5.5/10 or equivalent for SC/ST).
- ii. Applicants must also fulfill one of the following additional requirements.

1. For engineering stream:

- a. Qualified¹ GATE in the relevant streams. (Candidates with B.E. /B.Tech/MCA/M.Sc. degree or equivalent relevant degree must have a **valid** GATE score).
- b. Junior Research Fellowship (JRF) of CSIR/ UGC/ NBHM/ DBT/ ICAR/ ICMR/ ICPR Fellowship in the relevant streams.
- c. B.Tech/Dual degree from IIT with a CPI/CGPA of 8.0 or more.
- d. Minimum of 2 years of professional experience. (Acquired after obtaining the qualifying degree and completed before the start of the semester in which admission is sought) in the relevant areas. (Applicable to B.Tech/B.E. /MCA/M.Sc. qualifying degree candidates).

2. For science stream:

- a. Qualified GATE/CSIR/UGC-NET/JEST in the relevant streams.
- b. Junior Research Fellowship (JRF) of CSIR/ UGC/ NBHM/ DBT/ ICAR/ ICMR/ ICPR Fellowship in the relevant streams.
- c. An ongoing degree may also be considered as a qualifying degree provided the applicant graduates before the Ph.D. program starts.

¹ MTech/ME qualifying degree candidates are exempted from having a qualified GATE score for applying to the PhD program at IIT Goa

- d. B.Tech² degree in Mathematics and Computing from IIT with a CPI/CGPA of 8.0 or more.

b. Part-time Ph.D. program

- i. Applicants must have ONE of the following in appropriate subject areas.
 1. Master's Degree in Engineering/ Technology or equivalent degree with 60% marks or CPI 6/10 or equivalent. (55% marks or CPI 5.5/10 or equivalent for SC/ST) marks or equivalent and a minimum of two (02) years of work experience at the time of application.
 2. Bachelor's degree in Engineering/Technology with 60% marks or CPI 6/10 or equivalent. (55% marks or CPI 5.5/10 or equivalent for SC/ST) or equivalent and a minimum of four (04) years of work experience at the time of application.
 3. Master's degree in Engineering/Technology or equivalent degree with 60% marks or CPI 6/10 or equivalent. (55% marks or CPI 5.5/10 or equivalent for SC/ST) or equivalent from IIT/ IISER/ IIIT/ IISc/ NIT and a minimum of one (01) year of work experience at the time of application.
 4. Bachelor's degree in Engineering/Technology or equivalent degree with 80% marks or CPI 8/10 or equivalent (75% marks or CPI 7.5/10 or equivalent for SC/ST) or equivalent from IIT/ IISER/ IIIT/ IISc/ NIT and a minimum of one (01) year of work experience at the time of application.

02. Application categories for Ph.D. admission

a. Full-time or Regular Ph.D. program

- Teaching Assistantship (TA): Students get fellowship from the institute as per the guidelines by the Ministry of Education.
- TA through Project (TAP): Students get fellowship from the research project and partial support from the institute.
- Govt./ Semi Govt. Fellowship Awards such as QIP, CSIR-JRF, UGC-JRF, DAE, DST-INSPIRE, DBT, NBHM, etc.
- Sponsored: A student in this category is sponsored by a R&D organization, academic institution, government organization, or industry for doing research in the institute on a full-time basis. The institute does not provide any assistantship/fellowship to such a student.

² Only applicable for Mathematics Program

- Self-financed: A student in this category works full-time or part-time towards the Ph.D. program. The institute does not provide any assistantship/fellowship to such a student.

b. Part-Time PhD program

A student in this category is a professionally employed person (including IIT Goa staff), who pursues the Ph.D. program while continuing the duties of the employment. The institute does not provide any assistance/fellowship to such a student.

- Permanent employees from state or central government universities, colleges, or research institutes and labs.
- External - This category refers to a student employed in an R&D organization/academic institution/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 AU in which the student is registered.
- Self-sponsored.
- Permanent staff of IIT Goa.

03. Schedule of Admission for the Spring Semester of AY Ph.D. Program in 2023-24

Sr. No.	Particulars	Date
1	Start date of application (online only)	03 October 2023
2	Last date for submitting an online application form and completing the payment	31 October 2023
3	Commencement of classes for the Spring Semester	09 January 2024

The schedule for the written exam/interview will be informed to the shortlisted candidates via email separately.

04. Areas of Specialisation

Unless otherwise specified the opening is open to all categories.

Program	Research Area
Computer Science and Engineering (CSE)	<p>Institute TA category / JRF category:</p> <ol style="list-style-type: none"> 1. Computer Vision; Deep Learning & Lifelong Learning 2. Artificial Intelligence and Game Theory 3. Algebraic Foundations of Computer Science 4. Machine Learning and Robust Optimization 5. Computational Complexity, Graph Theory & Algorithms 6. Machine learning: Bayesian data analysis, approximate posterior inference, and deep latent variable models <p>TAP category:</p> <ol style="list-style-type: none"> 1. Debugging using Verification Techniques <p>Part-Time:</p> <ol style="list-style-type: none"> 1. Logics for Artificial Intelligence, Descriptive Complexity of Neural Networks, Transducers for Generative AI
Chemical and Materials Engineering (CME)	<p>Institute TA category:</p> <ol style="list-style-type: none"> 1. Soft Matter, Particle assembly, Colloids 1. Targeted Therapy using Graphene Quantum Dots
Chemistry	<p>Institute TA category:</p> <p>Candidates must have valid GATE score</p> <ol style="list-style-type: none"> 1. Organometallic chemistry and catalysis 2. Theoretical physical chemistry. <p>JRF category:</p> <ol style="list-style-type: none"> 1. Ultrafast spectroscopy, Experimental physical chemistry 2. Theoretical Physical Chemistry
Electrical Engineering	<p>Institute TA category:</p> <ol style="list-style-type: none"> 1. Communication and Signal Processing: Computational Imaging (Phase Retrieval), Interpretable Deep Learning. 2. Power Engineering: High Voltage Insulation and Computational Electrostatics, Power Electronics. (<i>ST Only</i>) 3. VLSI and Microengineering: Analog/mixed-signal Integrated Circuits and Systems, Digital

	Circuits/Systems Design, Approximate Computing, Computer Architecture, and Hardware Security.
Mathematics	<p>Institute TA category / JRF category:</p> <ol style="list-style-type: none"> 1. Differential Geometry 2. Functional Analysis, Operator Algebras, and Operator Theory 3. Partial Differential Equations, Numerical Analysis 4. Algebraic Geometry, Differential Topology
Mechanical Engineering	<p>Institute TA category:</p> <p>Domain: Solid Mechanics and Design</p> <ol style="list-style-type: none"> 1. Multiscale Modeling of Composites 2. Mechanics of granular materials; Pedestrian Dynamics 3. Mechanics of composite materials <p>Domain: Thermo-fluid Sciences</p> <ol style="list-style-type: none"> 1. Modelling supersonic turbulent reacting flows 2. Aeroacoustics: Far-field noise predictions in turbulent flows 3. Combustion model development for predicting various phenomena in turbulent flames 4. Computational fluid dynamics and porous media (SC/ST Only) <p>Domain: Manufacturing & Reliability</p> <ol style="list-style-type: none"> 1. Additive Manufacturing, Super Finishing, Micromachining 2. Design of Experiments and Reliability Studies for Composites in Marine Applications <p>Part-Time:</p> <ol style="list-style-type: none"> 1. Multiphase combustion (CFD)
Physics	<p>Institute TA category and/or JRF category:</p> <ol style="list-style-type: none"> 1. Theoretical High Energy Nuclear Physics 2. Theoretical Quantum Condensed Matter Physics <p>JRF category:</p> <ol style="list-style-type: none"> 1. Experimental Condensed Matter Physics

05. General Instructions

- a. Candidates are required to apply ONLINE. No downloadable forms are available.
- b. Candidates should be engaged in professional work related to the area of research discipline applied for in part-time Ph.D.
- c. The candidate of the Ph.D. (Sponsored) category should submit a Sponsor's Letter from the organization in which he/she is employed. The sponsoring organization should give an undertaking in the given format (Appendix A and Appendix B) stating the following
 - i. The candidate will be paid full salary during the Ph.D. program and he/she would be allowed to fulfill the coursework requirement and qualifier examination.
 - ii. Leave would be granted to fulfill the coursework and he/she will be allowed to attend the lectures, labs, etc. as per the academic schedule of IIT Goa.
- d. For more information regarding the Ph.D. program, please consult the Ph.D. Manual available at the institute's website.

06. Application Fee Payment

The application fee is as follows:

Female candidates	: ₹ 100/-
SC/ST/PwD/EWS Category candidates	: ₹ 100/-
All other candidates	: ₹ 200/-

The fee can be paid through NEFT/RTGS/UPI. The details of the institute bank details are:

Bank Name	: Union Bank of India
Account Name	: Student Fee Account IIT Goa
Account Number	: 520101260768219
Branch	: Farmagudi
IFSC	: UBIN0913286

Candidates are required to enter a valid UTR/Transaction Number and transaction date in the online application form. The application fee is non-refundable.

07. How to Apply

Please read the instructions and proceed to the online application portal

1. For New Registration Click on New User Registration.
2. Register with your valid email ID.
3. Fill the branch applying for (Fill separate applications for different programs).
4. Click on submit, and you will be redirected to the login page.
5. Login to the portal.
6. Candidates are required to fill details as given in the form and save the form.
7. Candidates are required to upload a recent Passport Photograph (Maximum 200KB), scanned copy of Signature (Maximum 12KB), detailed CV, and Mark sheets as per eligibility (Maximum 400KB), Appendix A or Appendix B(if applicable). The CV should mention the projects completed (bachelor's and master's) and the awards/recognition you received.
8. The system will not allow you to Submit the application without filling payment details.
9. Fill the payment details carefully (see the corresponding section); once filled cannot be edited.
10. After filling all the details, please Preview and Submit your application form. After the Final Submission, the system will not allow any further editing.

IIT Goa will provide off-campus hostel accommodation to all Ph.D. students.

For any academic query, please mail to academic_query@iitgoa.ac.in, and for any technical issue, please mail to phd_tec_issue@iitgoa.ac.in.

Please note meeting the basic eligibility criteria listed in the advertisement doesn't guarantee that the candidate will be shortlisted for the test/ Interview. The decision of the admission committee in this regard will be treated as final.

08. Glossary

Institute TA	Institute Teaching Assistantship.
JRF	Govt./ Semi Govt. Fellowship Awards such as CSIR-JRF.
TAP	Teaching Assistantship through Project.

Appendix A

(Employer's letter: To be submitted on the letterhead of the employer)

To

The Director,
Indian Institute of Technology Goa
Goa 403401

Sub: Employer's Letter for Part-Time Ph.D. Admission under External Candidates Category

Dear Sir,

With respect to the application of Mr./Mrs./Miss _____,
employed as _____ (Designation) in our organization, for
Part-Time Ph.D. Admission Under External Candidates Category, we hereby undertake the
following:

Mr./Mrs./Miss _____ will be allowed to take
leave as required for completing the coursework requirement and the PhD Qualifying
Examination as mandated by IIT Goa. We will/ will not continue to pay
Mr./Mrs./Miss _____ salary as per the HR policies
during the period of leave.

Name of Authorised Signatory

Signature of Authorised Signatory

Designation of Authorised signatory

Date:

Contact Details of Authorised Signatory

Employer's Seal:

Appendix B

(Sponsor's letter: To be submitted on the letterhead of the employer)

To

The Director,
Indian Institute of Technology Goa
Goa 403401

Sub: Sponsor's Letter for Part-Time Ph.D. Admission under Sponsored Candidates Category

Dear Sir,

With respect to the application of Mr./Mrs./Miss _____, employed as _____ (Designation) in our organization, for Part-Time Ph.D. Admission Under Sponsored Candidates Category, we hereby undertake the following:

- Mr./Mrs./Miss _____ will be allowed to take leave as required for completing the coursework requirement and the PhD Qualifying Examination as mandated by IIT Goa.
- We will/will not continue to pay Mr./Mrs./Miss _____ salary as per the HR policies during the period of leave.
- We state that appropriate facilities relevant to the research of Mr./Mrs./Miss _____ exist in our organization.
- Bio-data of proposed co-supervisor in our organization" Dr. _____ who is employed as _____ (Designation) is attached with the letter.

Name of Authorised Signatory

Signature of Authorised Signatory

Designation of Authorised signatory

Date:

Contact Details of Authorised Signatory

Employer's Seal: