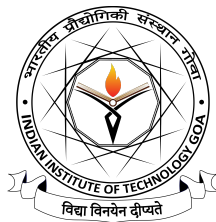


# PhD Admissions

Information Brochure | Autumn Semester 2023-24



**Academic Office**  
Indian Institute of Technology Goa

## Contents

Eligibility criteria for PhD admission	1
Full time PhD program	1
Part-time PhD program	2
Application categories for PhD admission	2
Full-Time or Regular PhD program	2
Part-Time PhD program	3
Schedule of Admission for autumn semester of AY PhD Program in 2023-24	3
Areas of Specialisations	4
General Instructions	6
Application Fee Payment	6
How to Apply	7
Glossary	8
Appendix A	9
Appendix B	10

## 01. Eligibility criteria for PhD admission

### a. Full time PhD 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<sup>1</sup>.

#### 1. For engineering stream:

- a. Qualified 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 PhD program starts.

---

<sup>1</sup> Applicants for PhD program in Mathematics or Theoretical Computer Science may satisfy either of 1 and 2.

## b. Part-time PhD 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 minimum of one (01) years 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 minimum of one (01) years of work experience at the time of application.

## 02. Application categories for PhD admission

### a. Full-Time or Regular PhD 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 organisation, academic institution, government organisation, 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.
- Self-financed: A student in this category works full-time or part-time towards the PhD 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 PhD 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 organisation/academic institution/industry having adequate research facilities. The research work leading to the PhD degree may be carried out largely in the parent organisation of the candidate under a Local Supervisor from the organisation 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 autumn semester of AY PhD Program in 2023-24

Sr. No.	Particulars	Date
1	Start date of application (online only)	13 April 2023
2	Last date for submitting an online application form and completing the payment	12 May 2023
3	Commencement of classes for the Spring Semester	24 July 2023

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><b>Institute TA category:</b></p> <ol style="list-style-type: none"> <li>1. Machine Learning &amp; Applied Statistics.</li> <li>2. Computer Vision, Deep Learning.</li> <li>3. Logics for Artificial Intelligence, Descriptive Complexity of Neural Networks, Transducers for Generative AI.</li> <li>4. Theoretical Computer Science, Communication Complexity.</li> <li>5. Machine Learning, AI, and Game Theory.</li> </ol> <p><b>JRF category:</b></p> <ol style="list-style-type: none"> <li>1. Logics for Artificial Intelligence, Descriptive Complexity of Neural Networks, Transducers for Generative AI.</li> </ol> <p><b>TAP category:</b></p> <ol style="list-style-type: none"> <li>1. Machine learning.</li> </ol> <p><b>Part-Time:</b></p> <ol style="list-style-type: none"> <li>1. Logics for Artificial Intelligence, Descriptive Complexity of Neural Networks, Transducers for Generative AI.</li> </ol>
Chemical and Materials Engineering (CME)	<p><b>Institute TA category:</b></p> <ol style="list-style-type: none"> <li>1. Nanomaterials, Soft matter, Hydrogen generation, Energy Storage, Biotechnology.</li> </ol> <p><b>TAP category:</b></p> <ol style="list-style-type: none"> <li>2. Photodynamic Therapy using Graphene Quantum Dots (GQDs).</li> </ol>
Chemistry	<p><b>Institute TA category:</b></p> <p>Candidates must have <b>valid</b> GATE score</p> <ol style="list-style-type: none"> <li>1. Organometallic chemistry and catalysis, inorganic chemistry.</li> <li>2. Statistical mechanics, physical chemistry.</li> </ol> <p><b>JRF category:</b></p> <ol style="list-style-type: none"> <li>1. Time resolved spectroscopy, Experimental Physical chemistry.</li> </ol> <p><b>TAP category:</b></p> <ol style="list-style-type: none"> <li>1. Synthetic Organic Chemistry.</li> </ol>

Electrical Engineering	<p><b>Institute TA category:</b></p> <ol style="list-style-type: none"> <li>1. Computational Imaging (Phase Retrieval), Interpretable Deep Learning.</li> <li>2. Industrial application of Electrical Discharge based Non-Thermal Plasma.</li> <li>3. VLSI Design.</li> </ol> <p><b>TAP category:</b></p> <ol style="list-style-type: none"> <li>1. Signal Processing for Super-resolution SONAR Imaging. <i>(The student admitted in this category shall work under a project funded by Indo-French Centre for the Promotion of Advanced Research (CEFIPRA) and therefore required to spend three months a year in France.)</i></li> <li>2. AI ML IoT applications in drone-related technology and 5G.</li> </ol> <p><b>Part-Time:</b></p> <ol style="list-style-type: none"> <li>1. Image Processing, Time Series Forecasting, Machine Learning.</li> </ol>
Mathematics	<p><b>Institute TA category (OBC/SC/ST only)/ JRF category:</b></p> <ol style="list-style-type: none"> <li>1. Differential Geometry and Complex Geometry.</li> <li>2. Partial Differential Equations, Numerical Analysis.</li> </ol>
Mechanical Engineering	<p><b>Institute TA category:</b></p> <p><b>Domain: Solid Mechanics and Design</b></p> <ol style="list-style-type: none"> <li>1. Granular materials; Mechanics of discrete entities; Pedestrian Dynamics</li> <li>2. Mechanics of composite materials</li> <li>3. Multiscale Modeling of Composites</li> </ol> <p><b>Domain: Thermo-fluid Science</b></p> <ol style="list-style-type: none"> <li>1. High-speed combustion modelling</li> <li>2. Aeroacoustic modelling for noise predictions from turbulent and turbulent-reacting flows</li> <li>3. Development of an advanced combustion model for predicting various phenomena in turbulent flames</li> <li>4. Numerical studies on turbulent flows over porous media (SC/ST Only)</li> </ol> <p><b>Domain: Reliability</b></p> <ol style="list-style-type: none"> <li>1. Design of Experiments and Reliability Studies for Composites in Marine Applications.</li> </ol>

	<p><b>Domain:</b> Manufacturing</p> <ol style="list-style-type: none"> <li>1. Manufacturing (ST Only)</li> </ol> <p><b>Part-Time:</b></p> <ol style="list-style-type: none"> <li>1. Computational fluid dynamics</li> <li>2. Manufacturing</li> </ol>
Physics	<p><b>Institute TA category (EWS and ST only):</b></p> <ol style="list-style-type: none"> <li>1. Theoretical Condensed Matter Physics</li> <li>2. Theoretical High Energy Nuclear Physics</li> </ol> <p><b>JRF category:</b></p> <ol style="list-style-type: none"> <li>1. Experimental Condensed Matter Physics</li> <li>2. Theoretical Condensed Matter Physics</li> <li>3. Theoretical High Energy Nuclear Physics</li> </ol> <p><b>TAP category:</b></p> <ol style="list-style-type: none"> <li>1. Theoretical Condensed Matter Physics</li> </ol>

## 05. General Instructions

- Candidates are required to apply ONLINE. No downloadable forms are available.
- Candidates should be engaged in professional work related to the area of research discipline applied for in part-time PhD.
- The candidate of PhD (Sponsored) category should submit a Sponsor's Letter from the organisation in which he / she is employed. The sponsoring organisation should give an undertaking in the given format (Appendix A and Appendix B) stating the following
  - The candidate will be paid full salary during the PhD program and he/she would be allowed to fulfil the coursework requirement and qualifier examination.
  - Leave would be granted to fulfil the coursework and he/she will be allowed to attend the lectures, labs etc. as per the academic schedule of IIT Goa.
- For more information regarding the Ph.D. program, please consult the PhD Manual available at the institute 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 for 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, 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 the 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 (bachelors and masters) and 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 Final Submission, the system will not allow any further editing.

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

For any academic query, please mail to [academic\\_query@iitgoa.ac.in](mailto:academic_query@iitgoa.ac.in) and for any technical issue, please mail to [phd\\_tec\\_issue@iitgoa.ac.in](mailto: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 PhD 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 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 PhD 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 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 organisation.
- 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: