



Defence Institute of Advanced Technology
(Deemed to be University) under section 3 of UGC Act 1956),
Girinagar, Pune-411025

Ph.D. Programmes- JANUARY- 2025

Applications are invited for admission to Ph.D. Programme, as per description below.

Introduction:

Defence Institute of Advanced Technology (DIAT) is Technological Institute of National repute for higher learning. The Institute imparts education and training in Advanced Technologies used for Tri-services, DRDO, DPSUs etc. DIAT found its roots in 1952, as a training institute has grown over the years into a premier teaching and research institute for DRDO and the Armed Forces.

The main focus of the institute is to evolve as an Innovative Unique Research University to develop indigenous contemporary Defence related technologies and also to provide technological solutions to the Services. DIAT is committed to generate high quality and talented human resource in broad areas of Defence Technologies to cater the needs of DRDO, Armed Forces and other Defence establishments.

DIAT offers admission to **Ph.D. (full-time)** in the frontier areas of Engineering & Applied Sciences.

Department /School-wise area of Research are as under: [Institutional Scholarship Category].

In addition, Project Staff from DRDO Laboratories & DIAT (JRF/SRF/PA) & Candidates with CSIR-NET, DST, UGC-NET or any other National fellowship / scholarship available to them are also eligible to apply for Ph. D. admission in any subject area of the concerned Deptt / School.

Sr. No	Department / School	Subject / Research Area
1	Metallurgical and Materials Engg.	Biotechnology / Microbiology / Biochemistry/ Nanocomposites/ Flexible Electrodes, High Energy Alloys, High Temperature Materials, Coating/ Corrosion, Supercapacitor and battery type electrode materials, Piezoelectric materials, Armor materials, Coating materials, Composite materials, High Temperature coating and Ceramics, Additive manufacturing, Texture Thermomechanical Processing of Metallic Materials Electrical Steel, Additive Frictions stir Processing/Welding, Polymer Nanocomposites for energy storage and water treatment, polyurethane foam for acoustic absorption and oil-water separation and carbon foams for energy storage, Polymer blend structure property relationship, Computational Materials Engineering, Energy Materials, Machine Learning, Microstructural modelling, Organic Photovoltaics, Phase-field modelling, Modelling and Simulation of Batteries and Supercapacitors.
2	Electronics Engg.	Antenna Systems, Microwave Engg. & Radar Applications, Radar, Radar Signal Processing, FPGA, SAR, RF, Photonics, EMI/EMC, RF & Microwave, Antenna Stealth & Shielding Materials, Brain Computer Interfacing, Human Computer Interaction, Signal Processing, Automations, RFID, Antennas, Microwave Circuits, Wireless Power Transfers, FSS, Embedded System FPGA, VLSI, SoC, Electronic Circuits & Systems Devises, SDR.
3	Computer Science & Engineering	QML, Anonymous Networks, Trustworthy AIML, Security in AIML, AI/ML AR/VR, Cryptography, Post Quantum Cryptography, Secure Software Engineering, Artificial Intelligence and Cyber Security, GANs, Explainable AI, Digital Forensics, Cyber Security, OS Security, NLP, Malware Analysis.
4	Applied Mathematics	Applied Mathematics, Convective in porous medium, FEM, AI/ML, Methods to PDE, Mathematical Modelling, Fluid Mechanics, Applied Mathematics, Image Processing/Numerical solution to PDEs, Deep Learning, Computer Vision, Machine Learning, Non-Parameter, Methods Statistical Machine Learning, Dimension Reduction.

5	Applied Chemistry	Nanomaterial Nanotechnology chemical synthesis QDs noble metal & meta hybrid chalcogenides for opto-electronics & energy application, Synthesis and Applications of Ionic Liquids, Photocatalytic Hydrogen Generation, Wastewater Treatment, Energy Storage Materials, Catalysis & Combustion, Adsorption of Solutes, Membrane Process, Biomimicry, Bio mineralization, Catalysis, Organic-Inorganic Hybrid Materials, Nanoscience, Biomaterials.
6	Mechanical Engg.	Indentation, Deformation behaviour, Impact Mechanics, Surface Engineering, Tribology, Avionics, FEM, Vibration, Broad area of Mechanical Engineering & its allied Branch, Composite material processing, Additive manufacturing, Micro Machining, Surface Engineering, CFD, Fluid Mechanics, Blast, Hardened Structures, Terramechanics, CFD, FSI, Shock tube Blast Valve, Heat Transfer, Composite structures, Fracture Mechanics, Functionally Graded Structures, Impact Mechanics, Heat transfer, Fluid Mechanics, Flow Control.
7	Aerospace Engg.	Control & Guidance
8	Applied Physics	Sensors, Electronics-Nose, Radar Absorbing materials, Metastructures for stealth, Nanomaterials, Microfluids, Memristors, Sensors, Devices, Materials, Electronics, AI-ML, Data Science.
9	School of Robotics	Robotics Control System, Aerial Robotics, Control and Dynamics, Underwater Robotics, AI/ML for Robotics.
10	Technology Management	HR analytics, Strategic Management, Knowledge Management, Organizational Behaviour, Innovation Management, R&D Management, Project Management, Supply Chain Management, Technology Management, Quality Management, Business Intelligence & Analytics, Green HRM, Machine Learning & Intelligence Operations, Digital Innovation, Waste to Wealth Management.
11	School of Energy & Environmental Systems	Green solvents, Combustion of Hydrogen, Photocatalytic Hydrogen Generation, Biomass to Fuel, Energy Storage Materials, Fuel Cell Membranes, Adsorption of Solutes, Wastewater Treatment, CO2 sequestration, Heat transfer enhancement, Heat Exchangers, Refrigeration and Air conditioning, Solar thermal applications-Photovoltaics, Desalination, IC Engines, CFD, Bio-fuels, Waste to Energy, Hydrogen Fuel Cell, Energy Management, Phase change materials, CFD and Heat Transfer, Hydrogen storage, Electric vehicles, Artificial Intelligence and Optimization, Solar Energy, Gas recovery from hydrates, Environmental Impact, Sustainability and Climate Science.

Eligibility:

a) Qualification

- A candidate, seeking admission to the Ph.D. program, shall be required to have passed the qualifying examination securing at least 55% marks or equivalent CGPA/DGPA. A relaxation of 5 % of marks may be allowed for those belonging to SC/ST/OBC (non-creamy layer) / PWD - (Divyang) categories. The qualifying degrees are: -
 - a) Master of Engineering/Master of Technology (or equivalent) for Ph.D. in Engineering/Science.
OR
 - b) Master in Science (M.Sc. or equivalent) for Ph.D. in Science
OR
 - c) A 1 year / 2 semester master's degree programme after a 4-years / 8 semesters bachelor's degree programme, provided that a candidate seeking admission after a 4-years/8-semester bachelor's degree programme should have a minimum of 75% marks in aggregate or its equivalent grade on a point scale wherever the grading system is followed. A relaxation of 5% marks or equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/ differently abled/EWS.

d) For Dept. of Technology Management:

i) M.Sc/ME/MS/M.Tech/MBA in relevant discipline

OR

ii) A 1 year / 2 semester master's degree programme after a 4-years / 8 semesters bachelor's degree programme, provided that a candidate seeking admission after a 4-years/8-semesters bachelor's degree programme should have a minimum of 75% marks in aggregate or its equivalent grade on a point scale wherever the grading system is followed. A relaxation of 5% marks or equivalent grade may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/ differently abled/EWS.

• A candidate who has passed the qualifying examination with the requisite percentage of marks as prescribed above and who fulfill the following requirement may be considered for admission to the Ph.D. programme:-

a) Qualified in a national level test such as, CSIR/UGC NET, JEST, Graduate Aptitude Test for Engineering (GATE), Rajiv Gandhi National fellowship, NBHM etc. subject wise and category wise GATE/NET cut off will be decided by DIAT.

OR

b) A candidate who is a recipient of National Doctoral Fellowship or other fellowships from government / semi-government organization such as Council of Scientific and Industrial Research (CSIR), University Grants Commission (UGC), INAE, All India Council for Technical Education (AICTE), Department of Science and Technology (DST), Dept. of Biotechnology (DBT), Defence Research and Development Organization (DRDO), Department of Atomic Energy (DAE) and similar organizations.

b) Age limit

Not above 35 years as on Jan, 01, 2025.

Relaxations as per Govt. of India rules apply to SC / ST / OBC / PH applicants.

Note:-

- Women candidates are encouraged to apply for admission.
- The Institute shall implement the reservation policy in Ph.D. admission in accordance with relevant act of Parliament being in-force from the time.
- A PWD (Divyang)/ SC/ST/OBC (non-creamy layer) candidate shall not get double benefit of being an SC/ST/OBC (non-creamy layer) as also a PWD candidate.
- Project Staff from DRDO Laboratories & DIAT [JRF/SRF/RA] working under sponsored projects may be allowed to register for PhD, subject to fulfilling eligibility criteria and also qualified GATE/NET examination. After completion of project, if the student is qualified in GATE/NET or any other national exams etc. he/she may be eligible for DIAT fellowship as per DIAT rules.

Selection:

Admission to Ph.D. will be based on the performance in the entrance exam (written test) conducted by the department concerned followed by a personal interview.

Financial Assistance:

a) The selected Ph.D. candidates against this admission notice, admitted as full-time Ph.D. students [Institutional Scholarship category] will be provided financial assistance as per Institute rules, in force from time to time. Currently institutional fellowship for first two year is of Rs. 37000/- and after that Rs. 42000/- upto 05 years / till the submission of thesis, whichever is earlier. The Ph.D. students (who are provided Institute fellowship) may also be assigned 4-6 hours per week of teaching/research assistantship for conduction tutorial or laboratory work and evaluation.

b) In addition to the Ph.D. scholarship, such candidates would also be entitled for contingency grant (presently **Rs. 15,000/-** per year) in accordance with the decisions of the Institute.

Boarding / Lodging:

Selected candidates will be provided hostel accommodation (Exclusive Girls Hostel available). Mess facilities are available on payment basis. The present monthly charges towards boarding and lodging are Rs. 7000/- (subject to revision). However, Rs. 40,000/- is to be deposited at the beginning of each Semester towards lodging and boarding charges, in advance. A security deposit of Rs. 10,000/- would need to be paid to Hostel Office.

How to Apply:

Application form is available at Institutes website <http://www.diat.ac.in> . Application fee of Rs. 500/- for General / OBC category, (Rs. 250/- for SC/ST & Women candidates) per programme is required to be paid either online (through State Bank collect) or by Demand Draft drawn in favor of Vice Chancellor, DIAT, Pune, payable at Pune-411025. The filled in application form in the prescribed proforma has to be forwarded in a sealed envelope, super scribed "Application for Admission to PhD Programme in the Department / School of _____" to the Joint Registrar (Academics), Defence Institute of Advanced Technology, Girinagar, Pune 411025 along with the DD / online generated receipt and self-certified copies of mark lists, certificates and other testimonials. These documents should reach DIAT latest by on or before **12th Nov 2024**. Postal delay will not be entertained. **Candidates seeking admission to more than one Department need to apply separately.**

General Information:

- Since the applications may be short listed, mere possessing of the prescribed qualifications would not entitle a person to be called for written test/interview. The Institute may restrict the number of candidates to be called for written test / interview to a reasonable limit, on the basis of qualifications / marks higher than that of the minimum prescribed in the advertisement.
- For short listing of candidates, the department screening committee may decide subject-wise and category-wise GATE/NET Cut off.
- Application once made will not be allowed to be withdrawn and fees once paid will not be refunded on any count nor can it be held in reserve for any other admission process
- Canvassing in any form will be a disqualification. Postal delay shall not be entertained.
- No correspondence will be entertained in respect of advertisement, interview, selection etc. The list of Shortlisted candidates will be displayed on <http://www.diat.ac.in> website along with other information viz. date of Interview / Written Test / Result. The candidates are requested to check the DIAT (DU) Website <http://www.diat.ac.in> for related information from time to time.

Course Fee and Other Charges:

Selected candidates for the Ph.D programmes [For first two years] are required to pay Semester Fee @ **Rs. 31,000/-** per semester (for Gen & OBC) and @ **Rs. 18,000/-** (for SC & ST) for first two years, payable immediately on joining and a caution deposit of **Rs. 10,000/-**, Alumni Life Membership **Rs. 1000/-** & **Rs.4000/-** as onetime fee, commencing from July-2024. Fees payable up to submission of thesis by candidate admitted to Ph.D. programme shall be as prescribed by the Institute from time to time.

Important Dates:

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| ➤ Last Date of receipt of Hard copy of application | :12 th Nov 2024 |
| ➤ Tentative Date of Written Test / Interview | :10 th Dec 2024 |
| ➤ Tentative date of commencement of the programme | :1 st week of Jan 2025 |
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