



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

Ph.D. Programmes- January- 2022

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 Aerospace Engineering, Mechanical Engineering, Electronics Engineering, Computer Science & Engineering, Applied Physics, Applied Mathematics, Materials engineering and Applied Chemistry. Limited few Institute Fellowships are available.

Department-wise areas of Research are as under: [Institutional Scholarship]

Sr. No	Department	Subject / Research Area
1	Metallurgical & Materials Engg.	Nanomaterials for Energy storage application, Nano composite for Energy harvesting application, Nano hybrid materials for drug delivery application, Polymer Science, Polymer Technology, Fibre Technology, Natural Fibres, Nanofibres, Nanotechnology, Additive Coatings, Environmental Remediation, Polymer Composites/ Nanocomposites/Polymer Foam/Carbon Foam
2	Applied Mathematics	Applied Maths, Fluid Mechanics
3	Computer Science & Engg.	Deep learning, Data Mining, Generative Adverbial Networks, Quantum Machine Learning, IoTs & Cyber Physical Systems.
4	Applied Chemistry	Chemistry of nanomaterials for energy, biomedical effluent treatment and allied applications, Nano-particles/polymer composites, metal chalcogenide semiconductor quantum dots etc.

In addition to the above, Project Staff (JRF/SRF/PA) working under sponsored projects & 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,

Sr. No	Department	Subject / Research Area
1	Applied Chemistry	Chemistry of nanomaterials for energy, biomedical effluent treatment and allied applications, Nano-particles/polymer composites, metal chalcogenide semiconductor quantum dots, Development and applications of ionic liquids, Preparation and applications of Energetic Materials, Development of nanomaterials for wastewater treatment, Liquid membrane based processes, Molecularly imprinted polymers, Heavy Metal Removal, Nanomaterials Organic and Hybrid Nanomaterials, Mesoporous Materials; Synthesis and Characterization, Functional Organic

		Nanocrystals Nanocomposites, Biomimicity, Catalysis, Organic Chemistry, Energetic Materials, Nano Materials.
2	Applied Mathematics	Applied Maths, Fluid Mechanics.
3	Mechanical Engg	Blast Protection Devises, Fluid Structure interaction blast valve, Guidance control and motion planning of AGVs/UAVs Robot vision, Arial Robotics.
4	Electronics Engg.	Radar system design, Radar signal processing, SAR/ISAR design for RCS measurement, Digital signal processing, Digital system design in FPGA, RF sensing/imaging, RF photonics, RCS reduced targets detection, classification and imaging. Antenna, Microwave, Radar system design, Radar signal processing, SAR/ISAR design for RCS measurement, RF sensing/imaging, RF photonics, RCS reduced targets detection, classification and imaging, EMI/EMC/NEMP, HPMW systems. Communication systems, Satellite communication, Navigation system, SDR, underwater communication, EW systems.
5	Metallurgical & Materials Engg.	Nanomaterials for Energy storage application, Nano composite for Energy harvesting application, Nano hybrid materials for drug delivery application, High Entropy Alloys, Powder Metallurgy, Deformation behaviour of materials, Metal Matrix composites, Polymer Science, Polymer Technology, Fibre Technology, Natural Fibres, Nanofibres, Nanotechnology, Additive Coatings, Environmental Remediation, Polymer Composites/ Nanocomposites/Polymer Foam/Carbon Foam
6	Computer Science & Engg.	Deep learning for image/video/cyber data analysis, Cryptography, Post Quantum Cryptography, Block Chain Technology, Secure Systems Design / Secure Computations, Software Engineering, Augmented Reality / Virtual Reality / Artificial Intelligence / Cyber Security, AR/VR/AI applications in Cyber Security, AR/VR/AI applications for Defence, Aircraft Maintenance, Game Theory applications in Defence.
7	Applied Physics	Free-Space Optical Communications, Silicon Photonics, MiD-IR Quantum Cascade Laser, Fiber Laser, THz Quantum Cascade Laser, Nanomaterials for Sensors & solar cells, micro fluidic devices, Sensors, Sensor Materials, Sensor Electronics Development, Machine Learning.
8	Aerospace Engg.	Aerodynamics, Flight Guidance and Control.
9	School of Quantum Technology	Quantum Computing, Quantum Information, Quantum Sensing
10	School of Robotics	Guidance control and motion planning of autonomous system, robot vision, Aerial Robotics, Biped, Quad Ped Locomotion, Control system, Multiagent Systems.

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.
 - b) Master in Science (M.Sc. or equivalent) for Ph.D. in Science
- 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 , 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 30 years as on January, 01, 2022.

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 [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.**

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 will be provided financial assistance as per Institute rules, in force from time to time. The Ph.D. students (who are provided Institute fellowship) will be required to assist in research and teaching activities for a maximum of 10 hours per week in addition to their own duties.
- 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 favour of Vice Chancellor, DIAT, Pune, payable at Pune. The filled 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 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 **25th Dec 2021**. 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 test/interview. The Institute may restrict the number of candidates to be called for 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 are required to pay Semester Fee @ **Rs. 31,000/-** per semester (for Gen & OBC) and @ **Rs. 18,000/-** (for SC & ST) payable immediately on joining and a caution deposit of **Rs. 10,000/-**, & **Rs.4000/-** as one time fee, commencing from Jan 2022. 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:

- Last Date of receipt of Hard copy of application :25th Dec 2021
- Tentative Date of Interview / Written Test :1st / 2nd week of Jan 2022
- Tentative date of commencement of the programme :1st / 2nd week of Jan 2022

(Tentative dates may be changed depending on the situation in view of covid-19)
