EXPLORE INNOVATE EXCEL

PUNJAB ENGINEERING COLLEGE

(DEEMED TO BE UNIVERSITY)

CHANDIGARH

PhD Admission Brochure

Session 2024-25
(July 2024 Intake)

Registration Fee (Non-Refundable)
for General: Rs. 1500/-
for SC/ ST: Rs. 750/-
(Fee for Additional Discipline: for General: Rs. 500/-
for SC/ ST: Rs. 250/-)

For Admission to PhD Programmes

Punjab Engineering College (Deemed to be University), Chandigarh

Admission Notice

Admission to PhD Programmes

Online Applications are invited for admission to PhD Programmes in various disciplines as mentioned in **TABLE-1**. The important dates regarding admission related activities are mentioned in **TABLE-2**. Applications may be submitted through the link on institute website **https://pec.ac.in/admissions/phd.** Hard copy of the registration form along with self-attested photocopies of the relevant documents and proof of payment of non-refundable registration fee of Rs. 1500/- or 750/- (as applicable) is to be submitted to Chairman Admissions, Punjab Engineering College (Deemed to be University), Sector – 12, Chandigarh – 160012 by hand /registered post/ speed post on or before the prescribed date and time. The candidates applying for more than one discipline should submit separate print-outs of the online registration form for the additional discipline**.** A sum of Rs. 500/- (non-refundable) for General Category candidates and Rs. 250/- (non-refundable) for SC/ ST candidates is to be paid as registration fee for the additional discipline applied. A candidate is permitted to apply for maximum two disciplines only.

TABLE-1
Area of Specialization and Qualifying Degree for PhD Admission for the session 2024-25 (July, 2024 Intake)

Sr. No	Department	Area of Specialization(s)	Qualifying Degree, eligible branches
1	Aerospace Engineering		• M.E./M.Tech. in Aerospace Engineering • B.E./B.Tech. in Aerospace Engineering • M.E./M.Tech. in Aeronautical Engineering • B.E./B.Tech. in Aeronautical Engineering • Or Any Other Equivalent
2	Chemistry	• Waste water treatment • Organometallics • Synthetic Organic Chemistry (Natural Products and Heterocycles) • Green Chemistry • Ionic liquids • Metal oxide nanomaterials • Nano structures • Corrosion resistant materials	• M.Sc. in Chemistry • M.Sc. Applied Chemistry • M.Sc. Industrial Chemistry • M.Sc. Environmental Sciences • M.Tech./M.E in Chemical Engineering • M.Sc. Material Science • M.Tech./M.E in Environmental Engineering

		• Chemosensors • Nano catalysis • Photo catalysis • Environmental Chemistry	• M.Tech./M.E in Material Science And Engineering • M.Tech./M.E in Material and Metallurgical Engineering • M.Sc/M.Tech Biotechology • M.Sc/M.Tech Polymer Technology • M.Sc Pharmaceutical Chemistry • Or Any Other Equivalent
3	Mathematics	• Algebra • Coding Theory • Computer Graphics • General Topology • Fuzzy Topology • Nano Topology • Rough Set Theory and Decision making • Operation Research • Multiobjective Optimization • Fuzzy Theory • Abrtract Harmonic Analysis • Fractal Geometry • Operator Theory • Spectral Theory • Fixed Point Theory	• M.Sc. in Mathematics • Or Any Other Equivalent
4	Physics	• Ferroelectric and Piezoelectric materials • Relaxor ferroelectrics • Magneto Electric Composites • Multiferroics • Structure-property correlations • Magnetic Semiconductors • Electrochemical Energy Storage • Multifunctional Materials for Energy, Environmental and Healthcare applications • Computational Studies of Thermoelectric materials • Hybrid functional materials and thin films for Energy and Biomedical Applications.	• M.Sc. in Physics • M.Sc. in Applied Physics • M.Sc. in Materials Science • M.Sc. in Energy Science • M.E./M.Tech. in Electronics • M.E./M.Tech. in Electronics & Communication Engineering • M.E./M.Tech. in Material Science • M.E./ M.Tech. in Materials and Metallurgical Engineering • B.E./B.Tech. in Engineering Physics • M.E./M.Tech. in Nanotechnology • B.E./B.Tech. in Electronics • B.E./B.Tech. in Electronics & Communication Engineering • B.E./B.Tech. in Material Science • B.E./B.Tech. in Materials and Metallurgical Engineering • B.E./B.Tech. in Nanotechnology • Or Any Other Equivalent

5	Civil Engineering	• Structural Engineering • Transportation Engineering • Water Resources Engineering • Environmental Engineering • Geotechnical Engineering • Construction Technology & Management • Remote Sensing and GIS	• M.E./M.Tech. in Civil Engineering • B.E./B.Tech. in Civil Engineering • Or Any Other Equivalent
6	Computer Science& Engineering	• Artificial Intelligence • Machine Learning • Soft Computing • Natural Language Processing • Speech Technology • Bio-Informatics • Wireless Sensor Networks • Networks & Security • Mobile & Adhoc Networks • Deep Learning • Medical Imaging • IOT & related areas • Software Engineering • Software Testing • Information retrieval • Prediction Algorithms • Cryptography • Data Analytics • Fault-Tolerant Distributed Computing • Explainable Artificial Intelligence • Blockchain Technology • IOT • SDN • Wireless Communication • Network Security • AI & ML • VANET • Web Crawling • Dark Web and Deep Web • Latest Areas Related to Covid 19 • Automata Theory • Or any other equivalent or related area	• M.E./M.Tech./MSc./M.A. in Computer Engineering • M.E./M.Tech./MSc./M.A. in Computer Science • M.E./M.Tech./MSc./M.A. in Computer Science & Engineering • M.E./M.Tech./MSc./M.A. in Computer Science & Information Technology • M.E./M.Tech./MSc./M.A. in Computer Technology • M.E./M.Tech./MSc./M.A. in Information Technology • M.E./M.Tech./MSc./M.A. in Computer Science & Technology • M.E./M.Tech./MSc./M.A. Computer Science & Engineering (Artificial Intelligence) • M.E./M.Tech./MSc./M.A. Computer Science & Engineering (Machine Learning) • M.E./M.Tech./MSc./M.A. Computer Science & Engineering (Data Science) • M.E./M.Tech./MSc./M.A. in Computer Science & Engineering (Cyber Security) • M.E./M.Tech./MSc./M.A. in Software Engineering • M.E./M.Tech./MSc./M.A. in Electrical & Electronics Engineering • M.E./M.Tech./MSc./M.A. in Electrical Engineering • M.E./M.Tech./MSc./M.A. in Electronics & Communication Engineering • MSc (CSE/IT) • MCA • B.E./B.Tech. in Computer Engineering • B.E./B.Tech. in Computer Science • B.E./B.Tech. in Computer Science

			& Engineering • B.E./B.Tech. in Computer Science & Information Technology • B.E./B.Tech. in Computer Technology • B.E./B.Tech. in Information Technology • B.E./B.Tech. in Computer Science & Technology • B.E./B.Tech. Computer Science & Engineering (Artificial Intelligence) • B.E./B.Tech. Computer Science & Engineering (Machine Learning) • B.E./B.Tech. Computer Science & Engineering (Data Science) • B.E./B.Tech. in Computer Science & Engineering (Cyber Security) • B.E./B.Tech. in Software Engineering • B.E./B.Tech. in Electrical and Electronics Engineering • B.E./B.Tech. in Electrical Engineering • B.E./B.Tech. in Electronics & Communication Engineering • Or Any Other Equivalent
7	Electrical Engineering	• Power System • Power Electronics • Control System • Renewable Energy System	• M.E./M.Tech. in Control Engineering • M.E./M.Tech. in Electrical & Electronics Engineering • M.E./M.Tech. in Electrical Engineering • M.E./M.Tech. in Instrumentation and Control Engineering • M.E./M.Tech. in Power Electronics and Drives • M.E./M.Tech. in Power System Engineering • M.E./M.Tech. in Systems and Control Engineering • M.E./M.Tech. in Power Apparatus and Systems • B.E./B.Tech. in Control Engineering • B.E./B.Tech. in Electrical & Electronics Engineering • B.E./B.Tech. in Electrical Engineering • B.E./B.Tech. in Instrumentation and Control Engineering • B.E./B.Tech. in Power Electronics

			and Drives • B.E./B.Tech. in Power System Engineering • B.E./B.Tech. in Systems and Control Engineering • Or Any Other Equivalent
8	Electronics & Communication Engineering	• UAV Assisted Communication • Green Communication • Resource Allocation and Performance evaluation of Communication Networks • Heterogenous Cellular Networks • Nano-Electronics and Its Applications • Resistive Switching Devices and System Design • Beyond CMOS Low Power Devices and System Design • Neuromorphic Engineering & Brain Inspired Electronics • Nanoelectronics • Microelectronics • Photonics • Microwave/Terahertz (THz)Antennas • Microwave/ Terahertz (THz) Devices • Renewable Energy Cognitive Radio • VLSI Design/ Technology • Wireless Sensor Networks • Electronic System Design • Assistive Technology • Digital Communication • Computer Aided diagnostics • Communication Engineering • Embedded Systems • Image Processing • Machine Vision • Silicon Nano Photonics • On-Chip Optical Devices • Photonic Integrated Circuits • Optical Networks-On-Chip • Analog System Design • Wireless Communication Networks • Photonic Sensors • Optical Communication & Networks • ML Assisted Communication System & Devices	• M.E./M.Tech. in Biomedical Engineering • M.E./M.Tech. in Electronics • M.E./M.Tech. in Electronics & Communication Engineering • M.E./M.Tech. in Electronics & Electrical Communication Engineering • M.E./M.Tech. in Electronics and Instrumentation Engineering • M.E./M.Tech. in Electronics and Telecom Engineering • M.E./M.Tech. in Electronics Product Design & Technology • M.E./M.Tech. in Embedded System • M.E./M.Tech. in Mechatronics • M.E./M.Tech. in Microelectronics • M.E./M.Tech. in Microwave Electronics • M.E./M.Tech. in Microwave Engineering • M.E./M.Tech. in Nanoelectronics • M.E./M.Tech. in Nanotechnology • M.E./M.Tech. in Power Electronics/ Energy System • M.E./M.Tech. in VLSI Design • M.E./M.Tech. in Digital Signal Processing • M.E./M.Tech. in Computer Science & Engineering • M.S. in Biomedical Engineering • M.S. in Digital Signal Processing • M.S. in Electronics • M.S. in Electronics & Communication Engineering • M.S. in Electronics & Electrical Communication Engineering • M.S. in Electronics & Telecomm Engineering • M.S. in Electronics and Instrumentation Engineering • M.S. in Electronics Product Design & Technology • M.S. in Embedded System • M.S. in Mechatronics

		• Antenna Design • 5G and Beyond • Artificial Intelligence • IC Chip Testing • Fault Tolrence in VLSI Systems • Solid State Physics/ Electronics • Semiconductor Devices • MEMS/NEMS • Optoelectronics • Flexible Electronics • Miniature micro Systems	• M.S. in Microelectronics • M.S. in Microwave Electronics • M.S. in Microwave Engineering • M.S. in Nanoelectronics • M.S. in Nanotechnology • M.S. in Power Electronics • M.S. in VLSI Design • M.Sc. in Electronics & Communication Engineering • M.Sc. in Electronics & Electrical Communication Engineering • M.Sc. in Electronics Engineering • M.Sc. in Physics (Electronics) • B.E./B.Tech. in Electronics & Communication Engineering • B.E./B.Tech. in Electronics & Electrical Communication Engineering • B.E./B.Tech. in Electronics Engineering • B.E./B.Tech. in Electrical Engineering • B.E./B.Tech. in Physics (Electronics) • Or Any Other Equivalent
9	Mechanical Engineering	• Manufacturing • Production • Design • Industrial Engineering	• M.E./M.Tech. in Design • M.E./M.Tech. in Industrial Engineering • M.E./M.Tech. in Mechanical Engineering • M.E./M.Tech. in Metallurgy Engineering • M.E./M.Tech. in Production Engineering • M.E./M.Tech. in Thermal Engineering • B.E./B.Tech. in Design • B.E./B.Tech. in Industrial Engineering • B.E./B.Tech. in Mechanical Engineering • B.E./B.Tech. in Metallurgy Engineering • B.E./B.Tech. in Production Engineering • B.E./B.Tech. in Thermal Engineering • Or Any Other Equivalent
10	Metallurgical & Materials Engineering	• Magnesium Alloys for Bio-Implant and Transportation Applications: Alloy Development, Coatings, and	• M.E/M.Tech. in Mechanical Engineering • M.E./M.Tech. in Metallurgical & Materials Engineering

		Corrosion Prevention • Light Metal foams • Advanced Welding Technology • High Strain Rate Materials • Corrosion • Fabrication of Ultra High-Temperature Ceramics via advanced sintering techniques for strategic applications • Solid lubricants for tribology of materials • Advanced high strength steel • Nuclear materials • Aerospace Materials • Materials Modeling & Simulation • Extractive Metallurgy • Solid electrolytes for batteries and fuel cells • Polymer Matrix composites	• M.E./M.Tech. in Production Engineering • M.E./M.Tech. in Automobile Engineering • M.E./M.Tech. in Chemical Engineering • B.E./B.Tech. Ceramic Engineering & Technology • B.E./B.Tech Materials Science & Engineering • B.E./B.Tech. in Automobile Engineering • B.E./B.Tech. in Chemical Engineering • B.E./B.Tech. in Mechanical Engineering • B.E./B.Tech. in Metallurgical & Materials Engineering • B.E/B.Tech. in Production Engineering • Or Any Other Equivalent
11	Production and Industrial Engineering	• Production Engineering • Manufacturing Engineering • Product Design and Development • Process Design • Product Policy and Management • UI/UX • Production and Operations Management • Communication Design • Advance Manufacturing • Finite Element Analysis • Supply Chain Management • Mechanical Engineering • Industrial Engineering • Quality Engineering • Welding Technology • Coating • Additive Manufacturing • CAD/CAM/CNC • Smart/Digital Manufacturing • Industrial Tribology • Ergonomics • Forming / Casting • Design • Industrial Design • Interactive Design • Ceramics Engineering • Materials Science & Engg. • Surface Engineering	• Master of Design (M.Des.) • M.E./M.Tech. in Additive Manufacturing • M.E./M.Tech. in Automation and Robotics • M.E./M.Tech. in Instrumentation Engineering • M.E./M.Tech. in CAD/ CAM • M.E./M.Tech. in CIM • M.E./M.Tech. in Design/ Applied Mechanics • M.E./M.Tech. in Foundry – Forge Technology • M.E./M.Tech. in Industrial Design • M.E./M.Tech. in Industrial Engineering • M.E./M.Tech. in Manufacturing Science / Engineering/ Technology • M.E./M.Tech. in Material Science and Engineering • M.E./M.Tech. in Mechanical and Automation • M.E./M.Tech. in Mechanical Engineering • M.E./M.Tech. in Material Science/Metallurgical Engineering • M.E./M.Tech. in Product Design and Development • M.E./M.Tech. in Production and

		• Reverse Engineering • Hybrid Manufacturing (Addictive + Subtractive) • Laser Materials Processing • Robotics	Industrial Engineering • M.E./M.Tech. in Production Engineering • M.E./M.Tech. in Rapid Prototyping • M.E./M.Tech. in TQM • M.E./M.Tech. in Welding • M.E./M.Tech. in Automobile Engineering • M.E./M.Tech. in Robotics • M.E./M.Tech. in Mechatronics • M.E./M.Tech. in Automation • M.Sc/ M.Phil in Mathematics/Physics / Statistics / Chemistry or other relevant/ equivalent • Master in Business Administration (MBA) • Post Graduate Diploma in Management • Executive Post Graduate Programme in Management (EPGP) leading to a degree of Master of Business Administration (MBA) • The Post Graduate Programme (Business Analytics) leading to a degree of Master of Business Administration (Business Analytics) (MBA(BA)) • The Post Graduate Programme (PGP) in Management leading to a degree of Master of Business Administration (MBA) • Post Graduate Diploma in Industrial Engineering • Post Graduate Diploma in Industrial Management • Post Graduate Diploma in Industrial Safety & Environmental Management (PGDISEM) • Post Graduate Diploma in Manufacturing Management • Post Graduate Diploma in Project Management **For Direct Admission to PhD** • B.E./B.Tech. in Additive Manufacturing • B.E./B.Tech. in Automation and Robotics • B.E./B.Tech. in Automobile

			Engineering • B.E./B.Tech. in CAD/ CAM • B.E./B.Tech. in CIM • B.E./B.Tech. in Instrumentation Engineering • B.E./B.Tech. in Design/ Applied Mechanics • B.E./B.Tech. in Foundry – Forge Technology • B.E./B.Tech. in Industrial Design • B.E./B.Tech. in Industrial Engineering • B.E./B.Tech. in Manufacturing Science and Engineering • B.E./B.Tech. in Manufacturing Science/Technology • B.E./B.Tech. in Material Science and Engineering • B.E./B.Tech. in Mechanical and Automation • B.E./B.Tech. in Mechanical Engineering • B.E./B.Tech. in Mechatronics • B.E./B.Tech. in Metallurgical Engineering • B.E./B.Tech. in Product Design and Manufacturing • B.E./B.Tech. in Production and Industrial Engineering • B.E./B.Tech. in Production Engineering • B.E./B.Tech. in Rapid Prototyping • B.E./B.Tech. in TQM • B.E./B.Tech. in Welding Engineering • Or Any Other Equivalent
12	Centre of Management and Humanities	• Finance & Entrepreneurship	• Master of Business Administration (MBA) • Master of Business Management • Master of Commerce (M.Com) • Post Graduate Diploma in Management (PGDM) • Or Any Other Equivalent
13	Cyber Security Research Centre	• Artificial Intelligence • Machine Learning • Bio-Informatics • IOT & related areas • Cryptography • IOT • Dark Web and Deep Web • Information Security	**Msc (IT), MCA or B.E./B.Tech. in any of the following:** • Computer Science and Engineering • Computer Technology • Computing in (Multimedia/Software) • Computer Engineering • Computer Engineering and

		• Cyber Warfare • Pervasive Sensing • Cloud Computing & Security Cyber Threat Intelligence Social Media Analytics Biometric Security • Selfie Biometrics • Latent Fingerprint & Image Processing • Digital Forensics	Application • Artificial Intelligence (AI) and Data Science • Artificial Intelligence and Machine Learning • Information technology • Cyber Security • Information Security • Computer Networking • Data Science • Computer Science and (Applied Mathematics/Business Systems/Design) • Computer Science and Engineering with specialization in any of the related fields such as: Artificial Intelligence, Machine Learning, Cyber Security, Data Science, Internet of Things, Block Chain Technology, Networks, Software Engineering • Computer Science and information Technology • Computer Science and Medical Engineering • Computer Science and Social Sciences • Electronics and (Control Systems/ Electrical Engineering/Instrumentation Engineering/Power Engineering/Telecommunication /Telecommunication Engineering/Telematics Engineering/ Communication Technology/ Computer Engineering/ Communication Engineering) • Electronics Communication and Instrumentation Engineering • Electronics Design Technology • Electronics Engineering (VLSI Design and Technology) • Electronics Instrument and Control • Electronics Engineering • Instrumentation Engineering **M.Tech/M. E in:** • Cyber Forensics • Cyber Forensics and information Security

			• Cyber Security Cyber Security Systems and Networks • Data Sciences • Digital Communication with specialization in related areas like Networking, Communication, Digital Image Processing, Digital Instrumentation, Distributed and Mobile Computing, Tele Communication, Real Time Systems, Embedded Control Systems) • Communication and Networking • Communication and Signal Process Communication • Control and Networking Communication Engineering • Computational Analysis in Mechanical Science • Computational Engineering and Networking (Data Science) • Computer Engineering (Software Engineering) • Computer Engineering and (Application/Networking) • Computer Hardware and Networking • Computer Network Engineering • Computer Science and (Information Technology/ Information Security/ Systems Engineering • Computer Vision and Image Processing • Advanced Communication and information System • Artificial Intelligence • Computer Science and Engineering with specialization in related areas like Artificial Intelligence and Machine Learning, Cyber Security, Networks, Operations Research, Big Data Analytics

TABLE-2: Important Dates
Admission Schedule for PhD Admissions 2024-25
(July, 2024 Intake)

Online Registration	**18.04.2024-22.05.2024 (Friday-Thursday) (till 05.00 PM)**
Last date for depositing hard copy of Registration Form along with supporting documents and proof of payment of registration fee	**27.05.2024 (Monday) till 05:00 PM**
Dispatch of Registration Form to various Departments	**28.05.2024 (Tuesday)**
Publishing of final list of eligible candidates	**06.06.2024 (Thursday)**
Entrance Test for non-GATE/ non-UGC-NET (JRF) candidates (details will be uploaded on institute website)*	**10.06.2024 (Monday) (Venue:- Drawing Hall)**
Selection of tentative topics, Interaction with perspective supervisors by the candidates along with filling of **Annexure-III**. Candidate has to submit filled Annexure-III in the department before interview.	**10.06.2024 – 11.06.2024 (Monday -Tuesday)**
Interview in respective departments along with verification of documents (details will be uploaded on institute website) *	**12.06.2024 (Wednesday)**
Result intimation with waiting list	**18.06.2024 (Tuesday)**
Payment of fees (Online)	**18.06.2024 to 21.06.2024 (Tuesday-Friday)**
Intimation to waitlisted candidates on institute website	**24.06.2024 Monday**
Payment of fees (Online) by waitlisted candidates	**24.06.2024-28.06.2024 (Monday-Friday)**
Reporting of PhD students in the respective departments	**As per Academic Calendar**

*The admission schedule may change according to the situation prevailing at that time, the candidates are advised to visit the institute website regularly.

Punjab Engineering College (Deemed to be University), Chandigarh

I. OBJECTIVE OF THE PhD PROGRAMME

Punjab Engineering College (Deemed to be University) has a mission to develop high quality science and engineering specialists having strong base in principles of science and the scientific methods, deep understanding of their chosen areas of specialization, motivation to learn continually, ability to interact with multi-disciplinary groups and to handle new challenges offered by the front-end technologies.

The PhD programme is designed to impart knowledge, consolidate concepts and intellectual skills through courses, seminars, projects, and thesis work. Above all, it helps the scholars to develop the capacity for free and objective enquiry, courage and integrity, awareness and sensitivity to the needs and aspirations of the society.

The programme provides the candidates an enabling research experience during their presence in the institute thus helping them to enter their professional life with right perspective and knowledge related to their respective fields of specialization.

II. Departments and Centres

The PhD Programme can be pursued in the following departments and Centres: -

1. Aerospace Engineering
2. Civil Engineering
3. Computer Science & Engineering
4. Chemistry
5. Electrical Engineering
6. Electronics and Communication Engineering
7. Mathematics
8. Mechanical Engineering
9. Metallurgical & Materials Engineering
10. Physics
11. Production and Industrial Engineering
12. Centre of Excellence in Industrial & Product Design
13. Centre of Management and Humanities
14. Cyber Security Research Centre

The institute encourages inter-disciplinary research across various departments.

III. Admission to PhD Programme

Admission to the PhD programmes is made on the basis of interview for candidates having valid GATE/ UGC NET (JRF) and on the basis of written test and interview for all other candidates by PhD Admission Committee of the respective Departments provided the candidate fulfils all the requirements at the Institute level and the selected candidate deposits the requisite fees for the PhD Programme. The applications received will be processed in the various departments for interview.

The PhD admission committee of the department will consist of Head of the Department, Members of Departmental Research Committee (DRC) and potential supervisors in various areas.

IV. Categories of PhD Programme Admissions

The applicant for admission to the PhD programme shall be classified under any one of the following categories which will be decided and recommended by the PhD admission committee of the department.

The research scholars shall be classified in the following manner

(A) ***On the basis of the time devoted to the PhD programme***

i) Full-time (ii) Part-time

(B) On the basis of the occupation

i) **Teacher**, a person serving as the faculty of a department of a teaching institute.

ii) **Non-Teacher**, a person serving as non-teaching employee including officer cadre of any Institute/Department, Organization.

iii) **Project staff,** a person working on a project undertaken by the Institute (PEC). The PhD programme of such a person should be related to the project work.

(C) On the basis of the country

i) **Indian**, a person holding valid Indian citizenship

ii) **Foreigner,** foreign nationals admitted through the Embassy of the respective Governments, after getting approval from the Ministry of External Affairs and 'No Objection Certificate' from the Ministry of Education, Government of India or admitted under an MoU. A foreign national can be admitted by the Institute directly, if eligible, following the admission process as specified under R-5.

(D) On the basis of the financial assistance

i) Sponsored

a. Research student/ Candidate working as a regular employee in the Institute
b. Research student/Candidate working as a regular employee in research organization like DRDO/ CSIR etc. and scientist/faculty working in the CRIKC

institutes will be eligible for admission to PhD Programme as a Part-Time Scholar provided he/she is in continuous service for the last 2 years in the same organization and can provide a No objection certificate from the employer. The DRC has to ensure the fulfilment of these conditions at the time of interview.

c. Research student / candidate working regularly full-time in an R&D project in the institute can join as a part time student if his PhD topic is related to the project as certified by the SRC immediately after joining the project However, part time research student/candidate may be given full time status when the project tenure is completed. To be accepted as a PhD student, a research student working in a project will have to undergo the same admission procedure as applicable in general.

ii) Fellowship / Scholarship

1. PhD Full-Time (Under Institute Fellowship)
2. PhD (Full Time) with External Fellowships Like JRF/DST Inspire, Visvesvaraya etc.
3. Krishna D Mahajan Doctoral Scholars Fund for Excellence in Research (Metallurgical & Materials Engineering)
4. PhD (Full Time) for candidates/staff working under the Research projects sponsored by MHRD/DST/UGC or some other government agencies at PEC.
5. Eligible candidates who did M.E./ M.Tech. with GATE and was getting institute assistantship are required to qualify the entrance examination test and the qualified candidates will be eligible for awards of institute scholarship. Such candidates are required to provide the proof of admission to M.E/ M.Tech. with GATE and was getting institute assistantship at the time of document verification/ interview.

Fellowship/ Scholarships are available to only Full Time research scholars.

V. Eligibility Criteria for Admission to PhD Programme

Educational Qualifications:

(a) The candidate possessing the prescribed qualifications shall be eligible for admission to the PhD programme of the Institute. The Degrees obtained through distance education programmes shall not be considered.

The academic programme as well as the University of qualifying degree must be recognized by AICTE /UGC. The academic programme of the autonomous Institutes established by the Parliament will not be required to have recognition of the UGC/AICTE. The degrees and academic programme of the Institute/University will be verified by the Departmental Admission Committee before registration of the candidate in PhD Programme.

(b) **Minimum Qualification for Eligibility:**

A Master's Degree in Engineering/Technology/Sciences/Humanities and Social Sciences/ Management or equivalent recognized by the Institute with a minimum

Cumulative Grade Point Average (CGPA) of 6.5 on a 10-point scale or equivalent as determined by the Institute wherever letter grades are awarded in the qualifying degree, or 60% marks in aggregate where marks are awarded.

The candidate having Master's Degree must possess full time Bachelor's Degree or equivalent with a minimum CGPA of 6.5 on a 10-point scale or equivalent as determined by the Institute wherever letter grades are awarded in the qualifying degree, or 60% marks in aggregate where marks are awarded.

OR

Direct Admission of B.E./B.Tech. candidates to PhD programme

a) To be eligible for the admission under this category, a candidate is required to have minimum CGPA of:

i. 8.0 or above with GATE or 8.5 or above without GATE for students graduated from PEC, CFTIs and other premium institutions at the end of the seventh semester (if applying during final year) under General category.

ii. 8.0 or above with GATE or 8.5 or above without GATE for students graduated from PEC, CFTIs and other premium institutions at the end of the eighth semester (if applying after the completion of B.E./ B.Tech) under General category.

iii. For SC/ST/PwD category students, the minimum CGPA requirement will be reduced by 0.5.

b) Successful candidates in final year of undergraduate programme may be given provisional admission to the PhD programme. This admission shall be confirmed provided the student completes his/her undergraduate programme with required CGPA.

c) Candidates from industry/research organisations are eligible for direct entry to PhD programme after BE/ B.Tech. with minimum CGPA 8.0 or above and with 5 years relevant experience. Candidates applying under this category is required to submit a "**No Objection Certificate" (Annexure-II)** on a proper letterhead from the appropriate authority of the organization**.**

d) Candidates getting direct entry to PhD programme after BE/ B.Tech will need to fulfill credit requirements through course work on pattern of courses offered to PG students and additional course requirements as per UGC.

Additional Eligibility Conditions for Part-Time PhD Programme

(i) **Permanent/Regular Employees** working in R&D Organisations, National Laboratories, Government Organizations, Industries, PSUs, State Undertakings having sufficient facilities to carry out research at their Organisation.

(ii) **Regular faculty** of reputed Institute/University having sufficient facilities to carry out research at their place in the related research area.

(iii) **Regular Employees** of PEC working in any Department/Centre, Centre and Section of the Institute.

All such candidates should have a minimum experience of two years which will be counted from the date of joining in the sponsoring organizations to the last date of application in the PhD programme. The candidate is required to produce the experience certificate at the time of interview before Departmental Admission Committee. Minimum qualification for these candidates is the same as for full- time candidates.

Part-time candidates are required to submit a "**No Objection Certificate" (Annexure-II)** on a proper letterhead from the appropriate authority of the organization clearly stating the following:

- That the candidate is permitted to pursue the PhD research work on a part-time basis.
- That the candidate's official duties permit the candidate to devote sufficient time for research work.
- That the facilities for the research work in the candidate's field of research work are available at the candidate's place of work.
- That the candidate will be sanctioned leave for sufficient duration for conduct of research work in case the research facilities are not available in the Institute/ Industry/Organization.

VI. RESERVATION/ RELAXATION

Reservation Norms

Reservation in full time/regular PhD seats in various categories will be made as per the norms of the Government of India amended from time to time. Such reservations in various categories will be implemented in all Departments/Centers on a rotational basis.

Relaxation of Eligibility for SC, ST, and PwD

For the SC/ST/PwD candidates, the eligibility requirement of marks/CGPA will be relaxed by 5%, or by a CGPA of 0.5 (on a 10-point scale) at both the Bachelor's and Master's level.

Exemption from written (entrance) Test

(a) Part-Time PhD programme:

Regular employees PEC and other R&D Organization, National Laboratories, Public/Private Industry/ PSUs/ State Undertakings having an MoU with PEC and with adequate research facilities possessing First Division or 6.5 CGPA on 10-point scale or equivalent at M.Tech./PG level with minimum 2 years of relevant experience will be exempted from the written test.

(b) Full-Time PhD Programme:

Valid GATE or Valid NET-JRF from UGC, CSIR etc. qualified candidates will be exempted from the written test. However, they shall be required to appear before the Departmental PhD Admission Committee of respective department for interview/interaction and qualify as per the prescribed norms in terms of the eligibility conditions.

VII. ENTRANCE TEST

Applications for PhD Programme are to be invited from Indian and foreign nationals in the prescribed format. Applications as received will be scrutinized by the concerned Department/ Centre. After scrutiny, the list of all eligible candidates will be uploaded on the Institute website by the Admission Office.

(a) All eligible Non-GATE/ Non-NET-JRF candidates are required to appear in an objective type (MCQ) written test of PG level comprising two parts as mentioned below:

- Paper-I*: Research Methodology: 30 marks; Duration: 30 minutes
- Paper-II: Area of Research/ Specialization: 60 marks; Duration: 60 minutes Qualifying marks**: 50 % of total marks.

Syllabus of discipline paper-II will be standard GATE syllabus of application domain. The discipline for which GATE is not conducted the standard syllabus of UGC-NET exam in the application domain will be followed.

The written test is only for Non-GATE/ Non-NET-JRF candidates. The written test will be conducted by the Admission Office. Detailed guidelines for conducting the entrance test along with timeline will be provided by Chairman Admissions.

*Common to all Depts./Centres

** Relaxation as per the Govt. of India norms

(b) List of the qualified candidates will be uploaded on the Institute website by the Admission Office.

(c) All qualified candidates will be required to appear before the respective DRC for an interview/interaction comprising a brief presentation on the related research area. Qualified candidates may contact prospective supervisors in the Department/Centre.

(d) DRC will evaluate the candidates and award the marks out of 30 (10 marks each for presentation, interview, and academic achievements).

Qualifying marks: 50% (15 out of 30 marks) **

** Relaxation as per the Govt. of India norms

(e) Based upon their performance in both written test and interaction/interview with DRC, Admission Committee of respective Department/ Centre will recommend the merit list of candidates prepared on the basis of total score out of 100 for Non-GATE/ Non-NET-JRF and 30 for GATE/NET-JRF verified candidates.

The merit list will be prepared as per the preference below: -

a. Candidates with valid GATE/UGC NET-JRF
b. Candidates appeared for written test

Qualified scholars working in Govt./R&D Org./Industry sponsored project/fellowship are to be supervised by the coordinating faculty/ Principal Investigator (PI), provided the faculty/PI is eligible to become supervisor.

In case of tie, merit list will be prepared on the basis of following criteria in order of preference:

a. Performance of the candidate in written test
b. Percentage of marks in qualifying degree
c. Percentage of marks in 10+2
d. Percentage of marks in 10th

VIII. Submission of Application form

Application for admission must be filled online (procedure for online registration is mentioned in para VII) and a copy of the filled registration form along with self attested photocopies of the following documents must be sent to Chairman Admissions, Punjab Engineering College (Deemed to be University), Sector – 12, Chandigarh – 160012 on or before the closing date as mentioned in Table-2:

I. Date of Birth Certificate
II. SC/ST Certificate (if applicable)
III. Valid GATE Score Card (if applicable)
IV. Copies of Bachelor's & Master's Degrees along with marks sheets
V. Valid UGC-NET (JRF) Certificate (if applicable)
VI. Migration Certificate [For candidates not having their Master's degree from Punjab Engineering College (Deemed to be University)]
VII. Persons with Disabilities certificate (if applicable)
VIII. Undertaking for candidates whose result is not declared **(Annexure-I)**
IX. Sponsorship/ NOC Certificate from current employer **(Annexure-II)**

NOTE:

1. Reservation of seats for SC/ST/PwD candidates shall be provided as per Govt. of India norms applicable from time to time.
2. Full-time candidates with assistantship joining on study leave must show proof of at least 3 years' study leave before being allowed to register.
3. The attendance of full-time PhD candidates will be governed by the attendance requirements of the Institute.
4. Only the predetermined number of students may be admitted to a PhD programme.
5. As per the provisions 1(5) of the UGC Regulations 2009, PhD program will not be conducted through distance education mode.

IX. Procedure for online Registration

Online Submission of application for Registration on **https://pec.ac.in/admissions/phd.** Please read the general instructions carefully before starting the registration process. The candidates are required to pay payment of non-refundable registration fee of Rs. 1500/- or 750/- (as applicable) online and a sum of Rs. 500/- (non-refundable) for General Category candidates and Rs. 250/- (non-refundable) for SC/ ST candidates is to be paid as registration fee for the additional discipline applied. The details of online payment are to be filled during online registration.

The process of online registration consists of three steps.

Step 1:

1.1 Enter a valid email address and other personal details.

1.2 On submission, a system generated username & password will be displayed on the screen. Note down this username and password for future reference.

Step 2:

2.1. Enter the academic qualifications.

2.2. The candidate then has to upload the scanned images of Photograph and Signature.

2.3. All Scanned images should be jpg/jpeg format only.

2.4. Size of the photograph image must be greater than 4kb and less than 200kb. The photograph should preferably have the frontal face with a light background.

2.5. Size of the signature image must be greater than 4kb and less than 100 kb.

2.6. Dimension of photograph image should be 200x150(height x width) pixels only.

2.7. Dimension of signature image should be 100 x 200 (height x width) pixels only.

2.8. The candidates are required to pay the registration fee as applicable through online mode and enter the transaction ID/UTR number of online payment.

2.9. The candidates have to select their choices of area of specialization in order of their preference.

2.10. Mention number of papers published and awards and scholarship, if any.

2.11. Mention any other relevant information.

2.12. After successful completion the registration form and choice filling, a confirmation page will be generated.

Step 3:

3.1 The candidates are advised to take 2 printouts of the confirmation page and send one copy of print-out along with documents to following address by hand/speed post/registered post so as to reach by the prescribed date.

Chairman Admissions,
Punjab Engineering College
(Deemed to be University)
Sector-12, Chandigarh - 160012

3.2 The institute will not be responsible for any delay in the receipt of hard copy of the Registration Form.

3.3 The candidates are advised to keep one copy of the confirmation page with them for future reference.

IX. GENERAL INSTRUCTIONS

1. Separate Registration form along with all enclosures should be sent for each department if applying for more than one department.
2. The Registration Fee is to be deposited through online payment in the following account: -

Bank Details

Name Of Account Holder	**Punjab Engineering College-Admissions**
Institute Name with Complete Address	**State Bank of India**
Branch Name With Complete Address	**PEC Branch, Sector 12, Chandigarh**
IFSC Code of The Branch	**SBIN0002452**
MICR Code	**160002008**
Bank Account Number (Saving Account)	**37646936859**

3. Self-attested copies of relevant certificates are to be enclosed.
4. Candidates should bring original certificates along with the Master's Thesis at the time of interview.
5. Duly filled Registration form must reach the Chairman Admissions, Punjab Engineering College (Deemed to be University), Sector – 12, Chandigarh – 160012 on or before the due date.
6. Name of the department in which the admission is sought should be super-scribed on the envelope.
7. In case result of qualifying degree is awaited, provisional admission is permitted to the candidate subject to meeting the above qualifying degree requirement latest by **September 30, 2024**. A certificate from the head of current institute to that effect should be submitted during document verification.
8. **Cancellation due to non-fulfilment of essential requirements:**

   If a candidate fails to satisfy the prescribed minimum educational qualifications, her/his allotted seat shall automatically stand cancelled. Candidate, for whom the result of qualifying degree is awaited, can take part in counselling process. However, they have to produce a course completion certificate duly signed by Head of the Institute at the time of the reporting. If any admitted candidate, whose result was awaited at the time of reporting, is not able to submit her/his qualifying degree certificate and marks sheet by

September 30, 2024, her/his admission shall automatically stand cancelled and refund of any fee will be done as per the institute norms.

X. DOCUMENTS TO BE PRODUCED DURING PHYSICAL REPORTING ALONG WITH TWO SETS OF SELF ATTESTED PHOTOCOPIES:

i. Printout of the Registration form
ii. Valid GATE score card/ UGC-NET (JRF) Certificate
iii. Photo ID proof as per Govt. of India norms (Aadhaar Card)
iv. Original Birth certificate issued by competent authority/Class X (High School) Board Certificate as proof of date of birth
v. Original Marks sheet of class XII
vi. Original Grade/Marks sheets of qualifying examination for all semesters
vii. Original Degree/ Provisional certificate, if degree is completed
viii. Original Certificate of category (SC/ST), if applicable, as per Government of India, issued by the competent authority.
ix. Original Migration certificate of last Institute/ University attended
x. Three colour passport size photographs
xi. Original Conduct/ Character Certificate from the Head of the institution last attended
xii. Original Course completion certificate from the Head of the University/Institute in case result is awaited
xiii. Persons with Disabilities certificate (if applicable)
xiv. Undertaking if applicable
xv. Sponsorship/ NOC Certificate (wherever applicable)
xvi. Master's Thesis/ Project Report

Note: If the original certificates are not in English/Hindi, English/Hindi version/translation of such certificates, duly certified by the Principal/Director of the graduating Institute, will be required during the verification of documents.

FEE STRUCTURE FOR PhD STUDENTS

One-time (at the time of Admission only)	
Admission Fee	Rs. 5,000/-
One- time Student service fee	Rs. 6,000/-
Security deposit (Refundable)	Rs. 8,000/-
Semester Fees	
Academic (Full Time Regular students)	Rs. 11,500/-
Academic (Part Time Students)	Rs. 22,500/-
Other facilities and services	Rs. 3,000/-
• **Total Payable at the time of admission (for full time regular students) is Rs. 33,500/-** • **Total payable at the time of admission (for part time students) Rs. 44,500/-**	

Every component of fees is subject to revision by Punjab Engineering College (Deemed to be University), Chandigarh from time to time without any prior notice. Tuition fees will be raised by at most 10% every year.

Annexure-I

UNDERTAKING FOR CANDIDATES WHOSE RESULT IS NOT DECLARED

I hereby certify in connection with the application of Mr./Ms._____that he/she is a bonafide student of our institution and is applying for admission to PhD programme(s) at Punjab Engineering College (Deemed to be University), Chandigarh. He/She has completed/ will complete the requirements of qualifying examination including theory papers, practical and project/dissertation examination for M.E/M.Tech./M.Sc./M.A by **September 30, 2024**.

(Strike out the non-applicable ones and write in the blank space if the degree is not mentioned). The percentage of aggregate marks/CGPA obtained by him/her upto pre-final Semester/year examination (Strike out the non-applicable) is His/her conduct and character during his/her stay at the Institute/University has been "GOOD".

Place: Signature of Principal/Dean/Registrar/
Date: Dy.Registrar/Proctor/Administrative Officer of the institute attending/last attended with seal

Annexure-II

FORMAT FOR CERTIFICATE OF SPONSORSHIP FOR NOMINEES

Certified that _____ son/daughter of Shri_____ has been working as_____ (e.g. Engineer/ Teacher) on regular full time basis in_____ (Department/Organization) since_____ (date). His/ Her provident fund account no. is _____. The officer/ official is permitted to pursue higher studies on full-time/ part-time basis. The officer/ official will be granted leave as per requirement for the period of study.

He/She is hereby sponsored for admission to PhD Programme in* _____ at Punjab Engineering College (Deemed to be University), Chandigarh for the session_____. In case he/she is selected for admission, he/she will be relieved from his/her duty and allowed to join the classes for full duration of the said programme.

If he/she leaves this Department/Organization during his/her period of study, Punjab Engineering College (Deemed to be University) will be informed accordingly to cancel his/her admission.

Further certified that he/she shall continue to be an employee of this Department/Organization and shall join back his/her duties after completing the programme. Certified that this institute is approved by AICTE *(only for an educational Institute).*

Date:_____ (Signature & Seal of the employer)

* Both the branch and the department should be mentioned.

Annexure-III

PUNJAB ENGINEERING COLLEGE, CHANDIGARH
(DEEMED TO BE UNIVERSITY)

1. Name of the Research Scholar: ……..
2. Status: Full-Time/Part-Time ……..
3. Scholarship/ Assistantship: ……
4. Proposed Supervisor(s)

Name of Faculty	Topic Discussed	Preference for supervisor

Dated: Signature of Candidate

Mb. No. _____

Recommendation of DRC Members

The following faculty is recommended as Supervisor(s)/ Co-supervior of the above Ph.D.

Scholar

Name …… Recommended as ……

Name …… Recommended as ……

Signature of DRC Members

Note: Filled Proforma duly signed by DRC members may be sent to the Dean Academic Affairs for approval.