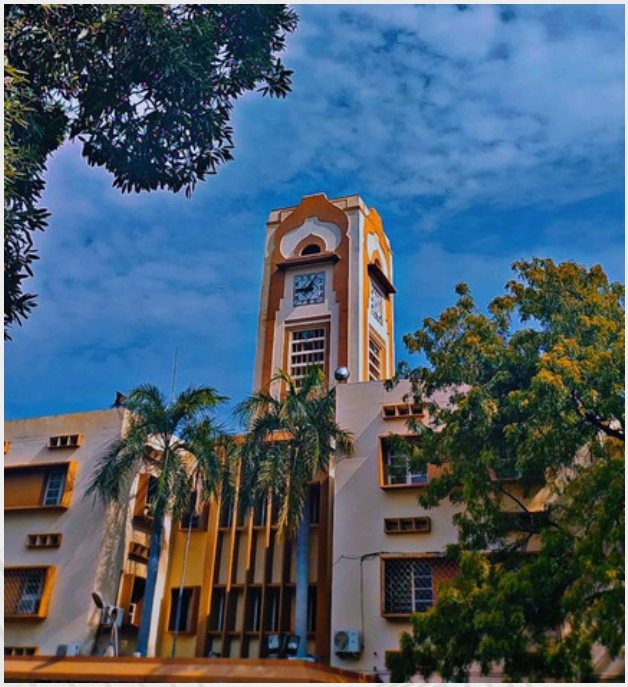
Regulations 2024

Ph.D.



National Institute of Technology
Tiruchirappalli - 620 015

www.nitt.edu

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Regulations

P.1.0 Introduction

P.1.1 The Regulations define the conditions for offering courses of instruction, conducting examinations, and evaluating the performance of research scholars leading to the award of the Ph.D. degree at the National Institute of Technology, Tiruchirappalli.

P.1.2 The Institute offers the Doctoral Programme leading to the Ph.D. degree in the following departments:

S. No.	Department	S. No.	Department
1	Architecture	10	Humanities and Social Science
2	Chemical Engineering	11	Instrumentation and Control Engineering
3	Chemistry	12	Management Studies
4	Civil Engineering	13	Mathematics
5	Computer Applications	14	Mechanical Engineering
6	Computer Science and Engineering	15	Metallurgical and Materials Engineering
7	Electrical and Electronics Engineering	16	Physics
8	Electronics and Communication Engineering	17	Production Engineering
9	Energy and Environment		

P.1.3 The provisions of these Regulations shall apply to any new disciplines introduced in the future and added to the above list.

P.1.4 These Regulations will also apply to the remaining batches of scholars admitted from July 2018 onwards.

P.2.0 Categories of admission for Ph.D. programme:

Candidates will be admitted to the Ph.D programme of National Institute of Technology, Tiruchirappalli (NIT-T) under one of the following categories

Full-time Ph.D. Research Scholar:

- **a.** Half-time Research Assistantship (HTRA) Scholars (Direct, Integrated and Lateral admission)
- **b.** Externally Funded Research Scholars
- **c.** Non-Stipendiary Scholars

Part-time Ph.D. Scholar:

a. Part-Time In-Service Internal Research Scholar (Employees of National Institute of Technology, Tiruchirappalli)

	b. Part-Time In-Service External (Industry / organization with R&D facility) and External (On campus) Research Scholar c. Part-Time External In-Service (B.E. / B.Tech.) (Industry / organization with R&D facility)
P.2.1	**Half-Time Research Assistantship (HTRA) Scholars**
	A qualified GATE score, or an equivalent national-level test score, is mandatory for receiving a fellowship. This is the only category for the applicants through direct and integrated channels. The application must include a Statement of Purpose (SoP) and at least two Letters of Recommendation, which will be quantitatively evaluated during the screening process. The number of seats under this category in various departments is determined by the seat matrix stipulated by the Ministry of Education (MoE). Candidates selected under this category will be classified as either LATERAL (those already possessing a master's degree), DIRECT (those currently in their final semester of a B.E. / B.Tech. (4-year) / B.Arch. (5-year) programme), or INTEGRATED (exceptionally performing applicants admitted through CCMT and currently completing the first year of their M.Tech. / M.Arch. programme at NIT, Tiruchirappalli, with a minimum CGPA of 8.5 up to the second semester, i.e., CGPA ≥ 8.5). All LATERAL, INTEGRATED, and DIRECT candidates undergo the same admission process—screening, written test, and interview—and compete equally for selection. All departments of the Institute admit candidates under this category, and selected candidates are eligible to receive the Half-Time Research Assistantship (HTRA). Recipients are required to assist in academic tasks assigned by the Head of the Department and/or Research Supervisor for at least 8 hours per week, as per MoE guidelines, in addition to fulfilling other requirements for the award and renewal of the fellowship. The award and renewal of the Assistantship are governed by the guidelines issued by the Ministry of Education from time to time. Currently, the fellowship is payable for a maximum of 5 years or until thesis submission, whichever is earlier. All LATERAL, INTEGRATED, and DIRECT candidates selected under this category in the Architecture, Engineering, and Science departments are also eligible for the Prime Minister's Research Fellowship (PMRF). Additional details are available at the PMRF website.
P.2.2	**Externally Funded Research Scholars**
	Externally funded research scholars are classified into the following categories: a. Scholars with fellowships from agencies such as UGC, CSIR, DST, DAE, NBHM, etc.: Candidates possessing fellowships from recognized funding agencies such as DST, NET, CSIR/UGC–JRF, NBHM–JRF, IDRBT, TCS, etc., relevant to the research grant, typically in the departments of Mathematics, Physics, Chemistry, Management, and Humanities & Social Sciences. The number of

	seats is limited and may vary from time to time based on selection criteria and administrative procedures. b. Scholars supported through Sponsored Research and Consultancy Projects associated with individual departments or faculty: c. Research scholars sponsored under the Quality Improvement Programme (QIP): Research scholars sponsored under the Quality Improvement Programme (QIP), TEQIP, ICCR, and similar schemes.
P.2.3	**Non-Stipendiary**
	A limited number of seats, determined periodically, are available on a completely self-financed basis for exceptionally qualified candidates holding relevant master's degrees. These seats are typically offered in the departments of Mathematics, Physics, Chemistry, and Humanities & Social Sciences. No financial assistance is provided to candidates in this category. While a valid GATE or equivalent national-level test score is preferred, it is not mandatory.
P.3.0	**Eligibility**
P.3.1	**Direct Applicants**
	This admission channel is intended for outstanding candidates currently in the final semester of their B.E. / B.Tech. (4-year) or B.Arch. (5-year) degree programme, who have cleared all exams in a single attempt without any arrears or supplementary exams. For applicants in the GEN/GEN-EWS/OBC-NCL categories, a minimum aggregate of 80% marks (or a CGPA of at least 8.5/10) is required. For applicants in the SC/ST/PwD categories, a minimum aggregate of 75% marks (or a CGPA of at least 8.0/10) is required. In addition, a valid GATE score or an equivalent national-level test score is mandatory. Candidates admitted through this channel are eligible for the Full-Time HTRA category in the Architecture and Engineering departments only. Selected candidates will enroll in a dual-degree M.Tech. / M.Arch. + Ph.D. programme in Engineering or Architecture.
P.3.2	**Integrated Applicants**
	This admission channel is designed for exceptionally performing candidates admitted through CCMT who are currently completing the first year of their M.Tech. / M.Arch. programme at NIT, Tiruchirappalli, with a minimum CGPA of 8.5 up to the second semester (i.e., CGPA ≥ 8.5 with no course grade below C), and who also hold a B.E. / B.Tech. (4-year) or B.Arch. (5-year) degree. At the undergraduate level: Applicants in the GEN / GEN-EWS / OBC-NCL categories must have a minimum aggregate of 60% marks (equivalent to a CGPA of at least 6.5/10).

	Applicants in the SC / ST / PwD categories must have a minimum aggregate of 55% marks (equivalent to a CGPA of at least 6.0/10). Selected candidates will enroll in a dual-degree M.Tech. / M.Arch. + Ph.D. programme in Engineering or Architecture.
P.3.3 Lateral Applicants	
	This admission channel is open to candidates holding master's degrees (including those currently in their final semester). For applicants in the OC/GEN-EWS/OBC-NCL categories, a minimum of 60% aggregate marks (or a CGPA of at least 6.5/10) is required in both undergraduate and postgraduate degrees. For applicants in the SC/ST/PwD categories, a minimum of 55% aggregate marks (or a CGPA of at least 6.0/10) is required in both undergraduate and postgraduate degrees. Additionally, a qualified GATE score or an equivalent national-level test score is mandatory for admission through this channel.
P.3.4 In-Service Internal Research Scholar (Employees of NIT,Tiruchirappalli)	
	A limited number of seats are reserved for employees of the Institute, subject to approval by the competent authority. Applicants to this category need to possess qualified GATE / UGC / CSIR / NBHM / NET / CAT / ATMA / XAT / MAT obtained at any time in the past, in addition to a master's degree. Candidates applying under this category are required to submit a hard copy of the completed online application through the proper channel. The selection process includes screening of applications according to the prescribed norms, followed by a written test and an interview.
P.3.5 In-Service External (Industry/Organization with R&D Facility) and External (On-Campus) Research Scholar	
	In-Service External (Industry/Organization with R&D Facility): A limited number of seats are available across all the departments for working professionals holding master's degrees from government and quasi-government R&D organizations, public sector units with R&D facilities, national research laboratories, and reputed industries or organizations (including private sector and MNCs) with well-established R&D facilities. For applicants under this category, a GATE score is not mandatory; however, they must be employed in organizations equipped with adequate research and library facilities to be considered for admission. A committee appointed by the Director—comprising the Dean Academic or nominee, Dean R&C or nominee, and Head of Department—will evaluate and approve the adequacy of the facilities before recognizing the organization for this purpose.

	Candidates must be officially sponsored by their employing organization and should have at least 3 years of regular/permanent work experience at the time of application. The employing industry or organization must have been operational for a minimum of 5 years to support candidates in the part-time Ph.D. programme. The residential requirement for Part-Time In-Service External scholars (from industries or organizations with R&D facilities) is waived. However, scholars are required to report to their research supervisor or Doctoral Committee at least three times each semester for formal review and discussion. Visits to the department may be planned during summer or winter vacations, and only on the Institute's working days. Applicants must provide detailed information about the research facilities available at their organization, along with a certificate from their employer confirming access to these facilities for research purposes. They should also submit the biodata of a prospective Co-Supervisor or Research Coordinator from their organization who will coordinate with the principal supervisor at NIT Tiruchirappalli. **Part-Time In-Service External (On-Campus) Category:** This is available for faculty members and working professionals with master's degrees from government, government-aided, or reputed private engineering colleges, science and arts colleges, universities, industries, or public sector organizations. Regular/full-time teachers or employees qualified in GATE / UGC / CSIR / NBHM / NET / CAT / ATMA / XAT / MAT will be considered for admission under this category. At the time of admission, candidates must submit a No Objection Certificate (NOC) and a Relieving Certificate from their parent institute or organization, allowing them to fulfil the mandatory one-semester residential requirement to complete coursework. Candidates must have at least 3 years of regular/permanent experience at the time of application. The college/organization must have a minimum of five years of established existence to sponsor candidates for the part-time Ph.D. programme
P.3.6	**Part-Time External In-Service (B.E. / B.Tech.)**
	This category is for candidates holding regular positions as Scientist, Engineer, or Manager, who possess a B.E. / B.Tech. degree and have a minimum of 10 years of experience in industry or R&D organizations. Candidates must be employed in government, quasi-government organizations, public sector units, or national research laboratories with well-established R&D facilities. Additionally, at least 7 of the 10 years of experience must have been gained after completing the B.E. / B.Tech. degree. GATE qualification is not mandatory.

	Eligibility based on academic performance: Candidates in the GEN / GEN-EWS / OBC-NCL categories must have at least 60% aggregate marks (or a CGPA of 6.5/10 or higher) in their B.E. / B.Tech. degree. Candidates in the SC / ST / PwD categories must have at least 55% aggregate marks (or a CGPA of 6.0/10 or higher) in their B.E. / B.Tech. degree.
P.3.7	Candidates admitted under categories P.3.4, P.3.5, and P.3.6—that is, Part-Time In-Service Internal and Part-Time In-Service External—are not eligible for any stipend or fellowship. These programmes are entirely self-financed.
P.3.8	**Additional Eligibility Criteria**
	Besides the minimum eligibility requirements, candidates must also fulfill department-specific eligibility criteria for Ph.D. admission, which are detailed in the annexure. These criteria are tentative and may be updated each semester. Applicants are advised to refer to the latest eligibility requirements published in the admission brochure issued with every application cycle.
P.4.0	**Selection Procedure**
P.4.1	For all categories of the Ph.D. programme, the selection process and criteria shall be uniform. After the initial scrutiny and shortlisting of applications, eligible candidates will be invited to appear for a written test.
P.4.2	Candidates shortlisted based on their performance in the written test* will be required to attend a technical and personal interview conducted by the Departmental Research Committee, which includes the Head of Department, all faculty members, and the Dean's nominee (observer). The final merit list—prepared in accordance with the Government of India's reservation policy, where applicable—is based on the combined evaluation of candidates' academic performance in UG/PG programmes, awards/prizes, publications, work experience (if any), and their performance in the personal interview. *The decision to conduct the written test will be made periodically.
P.5.0	**Admission**
P.5.1	The Institute Ph.D. Admission Committee, constituted by the Chairperson of the Senate, will recommend candidates for admission.
P.5.2	The research scholar must pay the prescribed semester fees until the submission of the thesis to maintain active registration.
P.5.3	A research scholar whose earlier registration has been cancelled is not eligible for re-registration in the Ph.D. programme. However, they may apply for admission anew as a fresh candidate in the subsequent admission cycle.
P.6.0	**Registration**
	A scholar's date of joining is considered the date of registration.

P.6.1	Ph.D. scholars are required to register in the MIS system each semester upon payment of the prescribed fees.
P.7.0	**Choice of Guide**
P.7.1	The Head of the Department will allot research scholars to guides based on the research areas of eligible faculty members and the preferences of the scholars.
P.7.2	Research scholars admitted under the Part-Time In-Service External category (Industry/Organization with R&D facility) will typically conduct part or all of their research work at their respective industry, organization, or national laboratory employing them. Such scholars will have one principal guide from NIT, Tiruchirappalli and an external co-guide or research coordinator from their organization.
P.7.3	For research scholars admitted under the Part-Time In-Service External (On-Campus) category—coming from Government, Government-Aided, reputed Private Engineering Colleges, Science and Arts Colleges, Universities, Industry, or Public Sector organizations—the primary place of work is NIT, Tiruchirappalli, even if part of their research is conducted at their respective college or institution. In such cases, a faculty member from NIT, Tiruchirappalli will serve as the principal guide.
P.7.4	A research scholar shall have no more than two guides, including the co-guide.
P.8.0	**Guideship**
P.8.1	All Institute faculty members holding a doctoral degree and having at least two papers published or accepted in peer-reviewed journals are eligible to guide Ph.D. scholars. For Part-Time In-Service External scholars (from industry/organizations with R&D facilities, government and quasi-government R&D organizations, public sector units, national research laboratories, or reputed private/MNC industries with established R&D facilities), the external co-guide must hold a Ph.D. degree and have a minimum of two papers published or accepted in peer-reviewed journals. If the candidate opts for a research coordinator instead of a co-guide, the research coordinator should hold a postgraduate degree and have at least ten years of relevant experience. The principal guide must be a faculty member of NIT, Tiruchirappalli from the scholar's respective department.
P.8.2	Students shall not be allotted to faculty members whose retirement date falls before the minimum duration of the Ph.D. programme is completed.
P.8.3	At any given time, an eligible research supervisor may guide up to 4 full-time HTRA Ph.D. scholars (counting only those currently receiving HTRA stipends) and up to 8 scholars from non-HTRA full-time or part-time categories. The total number of research scholars under a supervisor shall not exceed 12 at any point of time.

	However, requests for additional Ph.D. scholars beyond the limit of 8 non-HTRA full-time/part-time scholar-only under sponsored research projects category may be considered by a committee appointed by the Chairperson of the Senate.
P.8.4	In any given academic year, a research supervisor shall not be assigned more than two HTRA research scholars.
P.8.5	Eminent professionals working in reputed research organizations, MNCs with R&D units in India, national laboratories, or government/quasi-government R&D departments may be approved by the Chairperson of the Senate as eligible co-guides, provided they remain in service throughout the candidate's Ph.D. duration.
P.8.6	For all categories of Ph.D. students, an external co-guide from industry will be permitted only in cases involving collaborative or joint research projects.
P.8.7	**Continuance of Retired Faculty Members as Guide**
	A faculty member who has guided a research scholar for at least three years and subsequently retires may continue as the scholar's guide upon submitting a written request. Such retired faculty will be invited to Doctoral Committee (DC) meetings without any financial commitment from the Institute. However, TA and DA—limited to II class AC train fare within India—will be provided to attend the synopsis meeting and the viva-voce examination. Additionally, a co-guide will be appointed to offer administrative and research support to the scholar.
P.8.8	CSIR and other Emeritus Fellows/Scientists holding office at this Institute for three years or more may admit new students during their tenure as Emeritus Scientists only if the research scholar's financial support comes from external sources. Additionally, these scholars must have a co-guide who has at least three years of service remaining at the Institute.
P.8.9	Emeritus Fellows and Professors Emeritus are permitted to continue guiding Ph.D. scholars throughout their tenure.
P.8.10	Any Guide-in-charge who has served for more than one year during the absence of the originally allotted guide will become a special invitee or co-opted member of the Doctoral Committee once the original guide resumes their role.
P.8.11	External co-guides will be invited to attend Doctoral Committee meetings, synopsis meetings, and viva-voce examinations, with TA/DA provided according to Institute norms.
P.8.12	**Change of Guide / Addition of Co-Guide**
	Research scholars may request a change of guide or the addition of a co-guide (subject to regulation P 8.1) by applying to the Chairperson of the Senate through the Dean (Academic), citing valid reasons after the formation of the Doctoral Committee (DC).

<table>
<tr><td></td><td>The Chairperson of the DC or their nominee will convene the committee, and based on its recommendations, the Chairperson of the Senate will consider the request.

Addition of a co-guide is allowed only within the first four semesters for an internal co-guide and within the first six semesters from the date of registration for an external co-guide.

Removal of a co-guide is permitted only within the first three semesters from the date of registration.

Excluding a co-guide requires a formal recommendation from the DC, with all DC members—including the co-guide—present during the meeting. Final approval rests with the Dean (Academic) and the Chairperson Senate.</td></tr>
<tr><td>P.9.0</td><td>Doctoral Committee</td></tr>
<tr><td>P.9.1</td><td>The following is the composition of the Doctoral Committee (DC)
<table><tr><td>1.</td><td>Chairperson</td><td>One Professor from the institute to be nominated by the Research Guide</td></tr><tr><td>2.</td><td>Member</td><td>Research Guide</td></tr><tr><td>3.</td><td>Member</td><td>External co-guide (Part-time In-Service External (Industry / organization with R&D facility)) / Internal co-guide if any</td></tr><tr><td>4.</td><td>Member</td><td>One faculty member from the same department nominated by the Chairperson Senate / Dean (Academic) from the panel of names suggested by guide</td></tr><tr><td>5.</td><td>Member</td><td>One faculty member from an allied department nominated by the Chairperson senate / Dean (Academic) from the panel of names suggested by guide</td></tr><tr><td>6.</td><td>Member</td><td>One external member from Industry / Research establishment/ Academic institution (or) One faculty member from the same department to be nominated by the Chairperson senate / Dean (Academic) from the panel of names suggested by guide (optional).
(Each panel consisting of two members for item Nos. 4, 5, & 6. If external member is not suggested, provide a panel consisting of three members for item No.4)</td></tr></table></td></tr>
<tr><td>P.9.2</td><td>The Head of Department (HoD) will inform the Dean (Academic) of the research area, the name(s) of the guide, and a panel of names proposed by the guide for the Doctoral Committee (DC) for each research scholar, within one week of the scholar’s joining date.</td></tr>
<tr><td>P.9.3</td><td>If any member of the Doctoral Committee (including the Chairperson) goes on long leave, resigns, or retires from the Institute, the Chairperson of the Senate or Dean (Academic) will nominate a replacement based on the guide’s recommendation.</td></tr>
<tr><td>P.9.4</td><td>External members may be allowed to participate in Doctoral Committee (DC) meetings via video conferencing.</td></tr>
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P.9.5	The Doctoral Committee (DC) for each scholar shall convene its first meeting within one week of its formation to discuss the proposed research topic and recommend the appropriate coursework. The external member is not required to attend this initial meeting.
P.10.0	**Leave Entitlement and on-duty**
P.10.1	**Attendance and Leave Policy for Full-Time Research Scholars**
	All full-time research scholars are required to report to their department daily and record their attendance in the register. **Leave Entitlements in a Calendar Year:** **Casual Leave:** Scholars may avail up to 8 days of casual leave per calendar year, approved by the HoD based on the guide's recommendation. Casual leave cannot exceed 5 consecutive days and cannot be combined with any other leave except public holidays. **Restricted Holidays (RH):** Scholars are entitled to 2 restricted holidays per year. **Medical Leave / Vacation Leave (combined total of 14 days per year, excluding government holidays):** ***Medical Leave:*** Granted on medical grounds with a certificate from a registered medical practitioner endorsed by the Institute Medical Officer, subject to approval by the HoD on the guide's recommendation. ***Vacation Leave:*** Granted only during the Institute's declared vacation periods, upon recommendation by the guide and approval by the HoD. **Overall Limit:** For candidates receiving HTRA stipends, the total leave (all types combined) shall not exceed 24 days per year.
P.10.2	For research scholars funded by projects or other agencies, leave will be governed by the regulations of the respective funding bodies. If such rules are not specified, the Institute's leave policies will apply.
P.10.3	No leave can be carried over to the following calendar year.
P.10.4	Leave entitlement will be calculated proportionally based on the scholar's date of joining and date of leaving.
P.10.5	The department shall maintain a record of leave taken both up to and for the current month. Cumulative leave details must be recorded in the attendance register. Any loss of pay should be clearly indicated in the attendance report.
P.10.6	**Maternity Leave**
	Female Ph.D. candidates are entitled to maternity leave as per Government of India regulations.
P.10.7	**Paternity Leave**
	Male Ph.D. candidates are entitled to paternity leave as per Government of India regulations.
P.10.8	**On-Duty Leave for Data Collection, Conferences, Workshops, etc.**
	Full-time Ph.D. scholars receiving HTRA are eligible for on-duty leave of up to 30 days per semester to attend conferences, workshops, short-term

	training programs, data collection, field studies, and similar activities. If the duration exceeds 30 days, HTRA may not be granted for the extended period.
P.10.9	**Visits for Collaborative Research Outside India**
	HTRA and other full-time Ph.D. scholars may be allowed a maximum of 12 months in total for collaborative research visits to universities or laboratories outside India, limited to a maximum of three visits during their Ph.D. tenure. **Stipend During Foreign Visits:** HTRA students may continue to receive stipends during foreign visits if they do not receive funding from collaborative research projects or any other agency. **Eligibility for Foreign Collaborative Research Visits:** Full-time Ph.D. candidates (HTRA or other schemes) must have completed the required coursework and the comprehensive examination before undertaking foreign collaborative research visits. The comprehensive exam requirement may be waived on a case-by-case basis, subject to recommendation by the Doctoral Committee and approval by the Dean (Academic).
P.11.0	**Duration of Programme**
P.11.1	The duration of the programme for all categories, including the timeline for thesis submission, is calculated from the date of provisional registration.
P.11.2	The minimum duration for the direct, integrated, lateral, and part-time Ph.D. programme is three years. For direct and lateral candidates, this period is counted from the date of Ph.D. registration to submission of synopsis, while for integrated candidates, it is counted from the date of M.Tech registration. For direct, integrated and lateral full-time students receiving HTRA or external funding, the maximum permitted duration is six years. For part-time students, the maximum duration is seven years. Extensions beyond these limits—up to a maximum of eight years from the date of registration—may be granted based on recommendations from the Doctoral Committee.
P.11.3	Under extraordinary circumstances, extensions beyond the 8-year maximum duration may be considered based on the Doctoral Committee's recommendation. The Chairperson of the Senate may approve an extension of up to two semesters (one year) beyond the 8-year limit from the date of provisional registration, provided the scholar has at least one journal publication in accordance with NIT, Tiruchirappalli regulations. Any further extension beyond this period will be subject to the Senate's decision.
P.11.4	Half-Time Research Assistantship (HTRA) for full-time research scholars is available for a maximum duration of 5 years. Externally funded students will receive fellowships only for the duration of their respective projects, typically 2 to 3 years. No financial assistance

	shall be provided to externally funded students beyond the completion of their projects.
P.11.5	Only Direct and Integrated candidates will be awarded two degrees—M.Tech. and Ph.D.—upon successful completion of all requirements. These candidates are eligible to participate in campus placements only after submitting their Ph.D. thesis.
P.12.0	**Temporary Break from Ph.D. Programme**
	Full-time Ph.D. scholars who have completed their coursework may be permitted a temporary break from the programme for up to one year due to medical reasons or personal tragedies. This break requires a recommendation from the Doctoral Committee (DC) and approval from the Dean (Academic). The maximum duration of the Ph.D. programme will remain unchanged despite the temporary break.
P.13.0	**Full-time to Part-time Conversion**
	Full-time research scholars who have successfully completed a minimum residential period of two years and have qualified in the comprehensive examination may apply to the Chairperson of the Senate or Dean (Academic) to convert their status to part-time research scholars. Such conversion is subject to approval by the competent authorities. The Chairperson of the Senate or Dean (Academic) may approve conversion before completing two years of residential requirement, provided the candidate has completed the comprehensive examination and the conversion is for joining government employment only. If a research scholar leaves the Institute without fulfilling the above conditions, their registration will be cancelled. In case of employment, the scholar must submit a “No Objection Certificate” (NOC) from the employer along with a recommendation from the Doctoral Committee (DC) with proper justification immediately; failure to do so will result in cancellation of registration.
P.14.0	**Course Work and Grade Requirement**
P.14.1	All lateral full-time and part-time research scholars are required to successfully complete a minimum of four courses selected from the six theory courses recommended by the Doctoral Committee. These courses should preferably be completed within one semester and, in any case, no later than one year from the date of registration.
P.14.2	Ph.D. scholars shall attend classes alongside postgraduate students and will be evaluated using the same relative grading scale.
P.14.3	Postgraduate-level theory courses prescribed to Ph.D. scholars apply regardless of their department, and credits will be awarded following the standard evaluation procedure. However, these courses must not have been previously completed by the research scholar during their postgraduate program.
P.14.4	Courses may be prescribed from departments other than the one in which the research scholar is registered. Any changes to the prescribed courses

	require approval from the Doctoral Committee (DC). Additionally, the DC may prescribe extra courses whenever deemed necessary.
P.14.5	Only courses completed after the date of registration (for direct and lateral candidates) will count toward the requirements for the award of the Ph.D. degree. **For Direct Candidates:** The number of credits required will be equivalent to those needed for earning an M.Tech / M.Arch degree. Coursework is typically expected to be completed within the first year. The specific courses will be decided by the Doctoral Committee (DC). **For Integrated Candidates:** No separate coursework is required, as the coursework completed during their postgraduate program will be considered as fulfilling this requirement. During the second year (for both direct and integrated candidates), students shall begin preliminary research work as a short-term project. Evaluations by the DC will be conducted at the end of the 3rd and 4th semesters, similar to the M.Tech. / M.Arch. program. A pre-comprehensive examination will be held at the end of the 2nd year to review the research progress and assess the student's potential to continue in the Ph.D. program. At this stage, students may choose to exit the program with an M.Tech. / M.Arch. degree in the relevant specialization offered by their department. At the start of the 5th semester (for direct and integrated candidates), students will merge with lateral Ph.D. students in their 3rd semester to appear for the comprehensive examination and continue research work leading to publications. For more details about the semester plan, please refer to Appendix-1.
P.14.6	For the convenience of Part-Time In-Service External (Industry/organization with R&D facility) Research Scholars, the coursework requirement can be fulfilled either by attending courses at NIT, Tiruchirappalli or by completing online courses offered by reputed agencies such as NPTEL and SWAYAM, subject to approval by the Doctoral Committee (DC). Online courses must have a minimum duration of 12 weeks. Upon successful completion and certification of these courses, evaluation will be conducted or facilitated by the research supervisor in coordination with the DC at NIT, Tiruchirappalli.
P.14.7	Ph.D. scholars (HTRA, project-funded, other externally funded, Part-time In-Service External [On campus], and Part-time In-Service Internal Research Scholars) may be permitted to enroll in a maximum of two online courses, each with a minimum duration of 12 weeks, offered by platforms such as NPTEL and SWAYAM to fulfill their coursework requirements. The Doctoral Committee (DC) must ensure that the selected courses are at the postgraduate level and relevant to the scholar's research area. If equivalent courses are available at NIT, Tiruchirappalli, the scholar is not permitted to register for those courses online.
P.14.8	Part-Time External In-Service (B.E./B.Tech.) candidates are required to complete the prescribed six courses either through NPTEL/SWAYAM

	(each course of 12-week duration) or through contact mode at NIT, Tiruchirappalli.
P.14.9	The grading policy outlined below shall apply to Ph.D. programs for online courses such as NPTEL, SWAYAM, and similar platforms.

Type of Certificate	**Score**	**Equivalent Grade (For NIT-T)**
Elite with Gold	>=90	S
Elite with Silver	75 - 89	A
Elite	>=60	B
Successfully Completed	40 - 59	C
No Certificate	<=40	V

P.14.10	Research scholars admitted to the programme must achieve an overall grade of not less than B (CGPA ≥ 8.0) in their coursework. For lateral candidates, this overall grade calculation will consider the best four courses with the highest grades. Additionally, each course and short-term project (applicable only to direct and integrated Ph.D. candidates) must have a minimum grade of C.
P.14.11	Lateral research scholars who do not meet the grade requirements may either take other prescribed courses or opt for a one-time end-semester reassessment (rewriting the examination) in the course(s) where they scored less than a grade C.
P.14.12	For students admitted through Direct and Integrated channels, the coursework, including core, elective, laboratory courses, and short-term projects—will be listed under the relevant M.Tech / M.Arch programs. However, if the research work demands, the Doctoral Committee (DC) may recommend additional coursework beyond the initial two years, which the students must complete. Such coursework beyond two years will be recorded under the Ph.D. program.
P.14.13	Scholars who do not complete their coursework within the first year of Ph.D. registration may be granted an extension of up to two additional semesters for coursework completion, based on the recommendation of their Doctoral Committee (DC). If the candidate still fails to fulfill the coursework requirements after this extension, their Ph.D. registration may be cancelled.
P.15.0	**Comprehensive Examination**
P.15.1	Upon successful completion of the prescribed coursework, the research scholar shall appear for the Comprehensive Examination. This examination shall be conducted at the beginning of the 3rd semester, and in all cases no later than two years from the date of registration for lateral candidates. For direct and integrated Ph.D. candidates, the examination shall be conducted at the beginning of the 5th semester, and in all cases no later than three years from the date of M.Tech. registration. Requests for an extension to appear in the Comprehensive Examination may be approved by the Dean (Academic) on a case-by-case basis, subject to the recommendations of the Doctoral Committee and the Head of the Department.

	The comprehensive examination rigorously assesses the scholar's understanding of the broad discipline (e.g., electrical engineering) and evaluates their strengths and weaknesses concerning the chosen research problem. Evaluation metrics include, but are not limited to, coursework grades, the quality of the research proposal, and any publications.
P.15.2	The composition of the Comprehensive Viva-Voce Board shall be as follows: • HoD/ HoD's nominee • One External member – Professor / Associate Professor from IIT/ IISc / IIM / NIT/ Anna University/ School of Planning and Architecture/ JNAFAU / Central Universities or Scientists / Scientific Officers holding Ph.D. degree and drawing the scale of Professor and above, working in National and Regional laboratories, Defense Research Organizations, Atomic and Space Research Organizations. • Chairperson, guide and members of the doctoral committee of the research scholar. • The External Member for comprehensive Viva-Voce Board shall be nominated by the Chairperson, Senate / Dean (Academic) from a panel suggested by the Head of Department in consultation with the Guides.
P.15.3	The Comprehensive Examination shall consist of a written test (lasting at least one hour) followed by an oral examination. The written test is designed to rigorously assess the scholar's depth of understanding in the fundamentals of the broad research field, while the oral examination evaluates the candidate's motivation and aptitude for conducting independent research. The Comprehensive Examination for all eligible research scholars registered in a given session will be conducted during a specified period. The Head of the Department (HOD) is responsible for providing an indicative syllabus for the written test approximately one month before the examination.
P.15.4	Within two weeks from the date of the Comprehensive Examination, the Comprehensive Viva-Voce Board shall submit a report to the Dean (Academic) regarding the research scholar's suitability to continue with their Ph.D. work based on the examination results.
P.15.5	If a research scholar is not approved by the Comprehensive Viva-Voce Board based on the results of the Comprehensive Examination, the guide may prepare the scholar for a re-examination to be conducted within the next six months. Should the scholar's performance remain unsatisfactory in the re-examination, their registration in the Ph.D. programme will be cancelled.
P.16.0	**HTRA Enhancement**
P.16.1	The research scholar is eligible for stipend enhancement at the end of 4 semesters from the date of registration after successful completion of comprehensive examination upon fulfilling the following conditions.

	at least one publication in a journal (accepted in a relevant journal as described in P.19.1 of Ph.D. regulations. (or) A minimum of one conference publication at a well reputed conference indexed in Scopus or Web of Science, or conferences organized by CFTIs. (or) A minimum of one patent published / granted (or) DC recommendation with an external expert. However, annual satisfactory assessment (in the form of minimum fulfilment of the clause (a) or (b) or (c)) is mandatory to continue the benefit of enhanced fellowship during the SRF period.
P.17.0	**Progress Report**
P.17.1	All research scholars are required to undergo periodic progress reviews and assessments — once every semester up to the sixth semester, and twice every semester thereafter. Heads of Departments (HoDs) must submit the scholars' progress reports promptly to the office of the Dean, Academic.
P.17.2	The Doctoral Committee reviews the case and either recommends the course of action for thesis submission by the end of the 6th year (12th semester) or recommends cancellation of the registration.
P.18.0	**Seminar Presentation**
P.18.1	The scholar is required to present two seminars related to their research area. The first seminar should preferably be delivered after the acceptance or publication of the scholar's first journal paper. The second seminar should preferably be delivered after the acceptance or publication of the second journal paper. Only scholars who have successfully completed the prescribed coursework and the comprehensive examination are permitted to deliver seminar presentations.
P.19.0	**Synopsis of Thesis**
P.19.1	The research scholar shall be permitted to present and submit the synopsis of their research work only after Satisfactory completion of the prescribed coursework, qualifying in the Comprehensive Examination, and having the required number of publications accepted in their research area. Prior to synopsis presentation and submission, the scholar must have presented at least two seminars related to their research field. A minimum of two publications in reputed and indexed journals is mandatory before synopsis submission. The acceptable indexing databases are Web of Science Core Collection i.e., SCI, SCIE, ESCI, SSCI, AHCI and Scopus. Open-access journals indexed in SCI, SCIE, SSCI, and ESCI with Article Processing Charges (APC) can be accepted.

	Similarly, Scopus-indexed journals in Q1 and Q2 with APC are also acceptable. Authors must bear the APC costs. To ensure journals are not predatory, the scholar must submit proof of the peer review process, Peer review timeline, and Post-acceptance APC requests from the journal. Publications in journals publishing conference proceedings are not considered. The Doctoral Committee (DC) must verify and ensure these requirements are met during the synopsis meeting.
P.19.2	A Doctoral Committee (DC) meeting will be convened in the Academic Office for the synopsis presentation. Following the presentation, the guide shall submit the synopsis document along with any other required documents completed by the scholar to the Academic Office. The guide, in consultation with the members of the Doctoral Committee, shall also submit a panel of Indian and foreign examiners for the evaluation of the thesis.
P.20.0	**Panel of Examiners**
P.20.1	The panel of examiners recommended for thesis evaluation should consist of three members from India and three from abroad. Among the Indian examiners, at least two must be from premier institutions such as IIT, IISc, IISER, IIM, NIT, or SPA, with at least one from IIT, IISc, IIM, or SPA. The remaining Indian examiner(s) may be from State and Central Government-funded universities, institutions, or centrally funded research institutes. All Indian examiners should have a minimum of five years of post-Ph.D. experience. The foreign examiners should be affiliated with recognized research institutes or universities, with at least one examiner from universities in the USA, UK, Canada, Australia, Germany, Japan, or Singapore. Each foreign examiner must also have a minimum of five years of post-Ph.D. experience. All recommended examiners should possess expertise relevant to the subject area of the Ph.D. research.
P.20.1	The panel should exclude examiners who have evaluated and submitted a thesis report within the last six months in the same department, as well as any co-authors of the research scholar's papers.
P.21.0	**Thesis Submission**
P.21.1	The research scholar shall submit two hard copies and one soft copy of the thesis within three months from the date of synopsis submission. Along with the thesis, the scholar must also provide a Plagiarism Report, attested by the Research Supervisor, confirming that the plagiarism level is below 20%, excluding the scholar's own publications.
P.21.2	If the student fails to submit the thesis within three months from the date of synopsis submission, an extension of up to three additional months may be granted upon recommendation of the research guide and approval from the Dean (Academic). If the scholar still fail to submit within this extended

	period, the Doctoral Committee (DC) may propose a further extension of three months. In both cases of extension, a fresh panel of external Ph.D. examiners must be submitted for the evaluation of the thesis.
P.22.0	**Thesis Evaluation**
P.22.1	The thesis shall be referred to two examiners—one overseas and one from within India—selected by the Chairperson of the Senate from the panel of examiners submitted by the Guide.
P.22.2	In case of undue delay—beyond 45 days—in receiving the evaluation report, and after reminding the examiner, the Chairperson of the Senate or Dean (Academic) shall appoint another examiner from the panel to evaluate the thesis.
P.22.3	If an examiner recommends resubmission of the thesis, the research scholar will be allowed to submit the revised thesis within the time frame stipulated by the Doctoral Committee (DC). Failure to do so will result in the cancellation of the scholar's Ph.D. registration.
P.22.4	If one of the two thesis examiners declares the thesis as not acceptable, the thesis shall be referred to a third examiner, appointed by the Chairperson, Senate, from the approved panel for evaluation. If the third examiner declares the thesis as accepted, the Doctoral Committee (DC) will review all reports and recommend the conduct of the oral examination. This oral examination shall normally be held no earlier than two weeks from the date of constitution of the Oral Examination Board. However, under extraordinary circumstances, the Chairperson, Senate may permit the scholar to defend the thesis before the completion of the two-week notice period. If the third examiner also reports the thesis as not acceptable, the scholar's registration will be cancelled.
P.23.0	**Viva-Voce Examination**
P.23.1	After receiving the examiners' reports on the submitted thesis, the research scholar must defend their work in a public viva-voce. The viva-voce board will conduct an oral examination where the scholar presents their thesis and satisfactorily addresses all clarifications and questions raised by the thesis examiners.
P.23.2	The following is the composition of the public Viva-Voce Examination Board: a. Chairperson - Chairperson of Doctoral Committee b. Member - Research Guide c. The Indian examiner of the thesis In case the Indian examiner is not available on the proposed dates, a specialist in the subject may be nominated by the chairperson of the Senate / Dean (Academic) from the panel of examiners approved by the DC.
P.23.3	If the DC chairperson is unavailable (either online or offline) due to emergency or absence from headquarters during the Ph.D. viva-voce examination, the guide shall propose an alternative chairperson from the

	institute who must hold the rank of professor to oversee the viva-voce examination.
P.23.4	If the Viva-Voce Examination Board determines that the research scholar has not satisfactorily addressed the questions raised by the examiners, the scholar may be required to reappear for the Viva-Voce examination at a later date—no earlier than one month and no later than six months from the date of the first oral examination. The re-examination Viva-Voce Board will include the members of the Doctoral Committee (DC).
P.23.5	The Chairperson of the Doctoral Committee (DC) shall forward the report of the Viva-Voce Examination Board, along with the thesis incorporating the examiners' suggested corrections, to the Dean (Academic).
P.23.6	In exigent circumstances, the Chairperson of the Senate may permit an examiner to participate in the Viva-Voce examination through video conferencing.
P.24.0	**Award of Ph.D. Degree**
	The research scholar shall be awarded the Ph.D. degree at the ensuing convocation based on the recommendation of the Viva-Voce Examination Board.
P.25.0	**Discipline**
P.25.1	**General Discipline**
	Every student must maintain discipline and exhibit proper conduct both on and off campus, refraining from any actions that could harm the reputation of the Institute.
P.25.2	**Conduct in Examination Halls and Laboratories**
	Students must adhere to all rules and restrictions established by the Institute from time to time. Possession of mobile phones, carrying unauthorized notes, communicating with other students, or copying during assessments will be considered academic dishonesty and punishable. Offenders will receive zero marks for the assessment. In cases of copying, both the student copying and the student from whom copying occurred will be penalized with zero marks. All cases of malpractice and the corresponding penalties shall be reported by the Head of the Department to the Academic Office.
P.25.3	**Disciplinary Proceedings**
	Any act of indiscipline by a student shall be referred to the Discipline and Welfare Committee constituted by the Senate. The Committee will investigate the charges and, if substantiated, recommend appropriate punishment in accordance with the student code of conduct approved by the Senate. The Senate will review the Committee's recommendations and take suitable action. The Committee will report the actions taken at the next Senate meeting. The student has the right to appeal to the Chairperson of the Senate.

P.25.4	Academic Dishonesty & Plagiarism
	Possession of a mobile phone, carrying unauthorized notes, communicating with other students, or copying during an assessment shall be considered an act of academic dishonesty and is punishable. Offenders will be awarded zero marks. In cases of copying, both the student who copied and the student from whom the copying occurred will receive zero marks. The Departmental Disciplinary Committee, comprising the course faculty member, the Chairperson of the Performance Analysis Committee (PAC), and the Head of the Department, will investigate the incident. If the student is found guilty, appropriate punishment will be imposed, and the report will be submitted to the Academic Office.
P.25.5	**Ragging**
	Ragging in any form is a criminal and non-bailable offense in India. Both State and Central laws prescribe stringent punishments, including imprisonment, for those found guilty. If a student is found involved in ragging, they will be expelled from the Institute and barred from admission to any other institution. Collective punishment may also be imposed if individual offenders cannot be identified in such cases. Every senior student, along with their parent or guardian, must submit a signed undertaking against ragging annually at the time of enrollment.
P.26.0	**Power to Modify**
	Notwithstanding anything stated above, the Senate reserves the right to amend or modify any of these regulations from time to time.

ANNEXURE

Additional Eligibility Criteria

S. No.	Department	Programme	Ph. D. Eligibility
1.	Architecture	**UG**	B. Arch. in Architecture / Interior Design; B. Plan.
		PG	Architecture; Housing; Design; Landscape Architecture; Environmental Planning; Industrial Area Planning and Management; Infrastructure Planning; Planning; Architecture Conservation; Theory & Design; Town Planning; Urban and Regional Planning; Urban design; Urban planning; Urban Transport Planning and Management; City

			Planning; Building Technology; Building Engineering and Management; Energy Efficient and Sustainable Architecture; Sustainable Architecture; Real Estate; Interior Design; Construction Management with a qualified GATE score.
2.	Chemical Engineering (with M.E. / M.Tech. / MS (By Research))	**UG**	B.E. / B.Tech. in Engineering / Technology
			M.Sc. degree with specializations including Industrial Chemistry, Advanced Biochemistry, Environmental Management, Instrumentation Technology, Instrumentation and Applied Physics, Environmental Science, Biotechnology, Nano Technology, Material Science, Applied Chemistry, Applied Physics, Industrial Biotechnology, Polymer Science, Applied Electronics.
		PG	M.E. / M.Tech. / MS (By research) / other appropriate relevant degrees in Chemical Engineering; Biochemical Engineering; Biotechnology; Bioprocess Engineering; Petroleum Engineering; Petrochemical; Polymer engineering; Nano Technology; Ceramics Engineering; Chemical Reaction Engineering; Computer aided design; Pharmaceutical Biotechnology; Food Processing Technology; Industrial Safety Engineering; Industrial Pollution Control; Thermal Power Engineering; Material Science and Technology; Wastewater Management; Health and Safety Engineering; Environmental Engineering; Energy and Environmental Engineering; Process Control, Electronics and Instrumentation; Industrial Biotechnology; Instrumentation Engineering; Process Control and Instrumentation; Control and Instrumentation; Applied Instrumentation; Metallurgical Engineering; Process Instrumentation, Artificial intelligence; Computer Applications; Data Sciences or any other appropriate/relevant specialization.
	Chemical Engineering (with M.Sc.)	**PG**	1. M.Sc. degree in Industrial Chemistry; Advanced Biochemistry; Environmental Management; Instrumentation Technology; Instrumentation and Applied Physics; Environmental Science; Biotechnology; Nano Technology; Material Science; Applied Chemistry; Applied Physics; Industrial Biotechnology; Polymer Science; Applied Electronics with a qualified GATE Score / Joint CSIR – UGC NET (Assistant Professor / Admission to Ph.D. only) 2. Applicants having their own fellowships from Joint CSIR – UGC NET JRF / INSPIRE / etc., can apply for Ph.D. in the department relevant to the research grant.
3.	Chemistry	**UG**	-
		PG	1. Master degree in Chemistry / Applied Chemistry / Organic Chemistry / Inorganic Chemistry / Analytical Chemistry / Physical Chemistry with a

			qualified GATE Score / Joint CSIR – UGC NET (Assistant Professor / Admission to Ph.D. only) 2. Applicants having their own fellowships from Joint CSIR – UGC NET JRF / INSPIRE / etc., can apply for Ph.D. in the department relevant to the research grant.
4.	Civil Engineering	**UG**	Civil and Environmental Engineering; Civil and Infrastructure Engineering; Civil and Rural Engineering; Civil and Water Management Engineering; Civil Engineering; Civil Engineering (Construction Technology); Civil Engineering (Environmental Engineering); Civil Engineering and Planning; Civil Engineering Environment and Pollution Control; Civil Engineering with Computer Application; Civil Environmental Engineering Civil Technology
		PG	Post Graduate Degree in Engineering and Technology (i) **Construction Technology and Management:** Building Construction Technology; Civil (Construction Engineering and Management); Civil Engineering (Construction Technology); Construction and Project Management; Construction Engineering; Construction Engineering and Management; Construction Management; Construction Planning and Management; Construction Project Management; Construction Technology; Construction Technology and Management; Logistics & Supply Chain Management; Infrastructure Management; Infrastructure Engineering and Management; Quality Engineering and Management (ii) **Environmental Engineering:** Civil (Public Health and Environment) Engineering, Civil and Environmental Technology; Civil Engineering (Environmental and Pollution Control); Civil Engineering (Environmental Engineering); Civil Environmental Engineering; Environment and Water Resource Engineering; Environment Engineering; Environmental Biotechnology; Environmental Engineering; Environmental Engineering and Management; Environmental Management; Environmental Science and Engineering; Environmental Science and Technology; Waste Water Management, Health and Safety Engineering; Water and Environmental Technology; Water Resources and Environmental Engineering

			(iii)	**Geotechnical Engineering:** Foundation Engineering; Geomechanics and Structures; Geotechnical and Geo-environmental Energy; Geotechnical Earthquake Engineering; Geotechnical Engineering; Geotechnology; Soil and Water Conservation Engineering; Soil Mechanics; Soil Mechanics and Foundation Engineering
			(iv)	**Remote Sensing:** Geo Informatics; Geo Informatics and Surveying Technology; Geoinformatics and Earth Observation; Remote Sensing; Remote Sensing and GIS; Remote Sensing and Wireless Sensor Networks
			(v)	**Structural Engineering:** Civil (Structural Engineering); Civil Engineering (Computer Aided Structural Engineering); Computer Aided Design of Structures; Computer Aided Structural Analysis and Design; Computer Aided Structural Engineering; Earthquake Engineering; Industrial Structures; Infrastructure Engineering; Infrastructure Engineering and Technology; Reliability Engineering; Seismic Design and Earthquake Engineering; Structural and Construction Engineering; Structural and Foundation Engineering; Structural Design; Structural Dynamics and Earthquake Engineering; Structural Engineering; Structural Engineering and Construction; Structural Engineering and Construction Management
			(vi)	**Transportation Engineering and Management:** Highway Engineering; Highway Technology; Town and Country Planning; Traffic and Transporting Engineering; Transport Science and Technology; Transportation Engineering; Transportation Engineering and Management; Transportation System Engineering; Urban Engineering; Transport Planning and Management; Transportation Planning; Urban Planning
			(vii)	**Planning:** Transport Planning and Management; Transportation Planning; Urban Planning
			(viii)	**Water Resources Engineering:** Civil Engineering (Water Management); Civil (Water Resource Engineering); Hydraulics

			and Flood Control; Hydraulics Engineering; Hydrology and Water Resources Engineering; Irrigation and Drainage Engineering; Irrigation Engineering; Irrigation Water Management; Water Engineering and Management; Water Resource Engineering; Water Resource Management; Water Resources and Hydraulic Engineering; Water Resources and Hydroinformatics, Ocean Technology
5.	Computer Applications (with M.E. / M. Tech / M.S (by Research)	**UG**	B.E. / B.Tech. degree (or) Equivalent
		PG	M.E. / M. Tech / M.S (by Research). in CS (or) CSE (or) IT (or) Relevant field
	Computer Applications (with MCA/M.Sc.)	**UG**	Any UG Degree (or) Equivalent;
		PG	1. PG degrees / Integrated PG Degree in Computer Applications (or) Computer Science (or) Relevant field with qualified GATE Score / UGC NET (Assistant Professor / Admission to Ph.D. only) / NBHM Score 2. Applicants having their own fellowships, UGC NET JRF / INSPIRE / etc., can apply for Ph.D. in the department relevant to the research grant.
6.	Computer Science and Engineering	**UG**	Artificial Intelligence (AI) and Data Science; Artificial Intelligence and Machine Learning; Computer and Communication Engineering; Computer Engineering; Computer Engineering (Software Engineering); Computer Engineering and Application; Computer Networking; Computer Science and Business Systems; Computer Science and Engineering; Computer Science and Engineering (Artificial Intelligence and Machine Learning); Computer Science and Engineering (Artificial Intelligence); Computer Science and Engineering (Cyber Security); Computer Science and Engineering (Data Science); Computer Science and Engineering (Internet of Things and Cyber Security Including Block Chain Technology); Computer Science and Engineering (Internet of Things); Computer Science and Engineering (Networks); Computer Science and Engineering and Business Systems; Computer Science and information Technology; Computer Science and Systems Engineering; Computer Science and Technology; Computer Technology; Computing in Multimedia; Computing in Software; Cyber Physical Systems; Electrical and Computer Engineering; Electrical and Electronics (Power System); Electrical and Electronics Engineering; Electrical and instrumentation Engineering; Electrical and Power Engineering; Electrical Engineering; Electrical

			Engineering (Electronics and Power); Electrical instrumentation and Control Engineering; Electrical Power Engineering; Electrical, Electronics and Power Engineering; Electronic Engineering; Electronic Instrumentation and Control Engineering; Electronic Science and Engineering; Electronics and Biomedical Engineering; Electronics and Communication (Communication System Engineering); Electronics and Communication Engineering (Advanced Communication Technology); Electronics and Communication Engineering (VLSI Design & Technology); Electronics and Communication Engineering; Electronics and Communication Engineering (Bio-Medical Engineering); Electronics and Communication Engineering (Industry Integrated); Electronics and Communication Engineering (Microwaves); Electronics and Communication Technology; Electronics and Computer Engineering; Electronics and Computer Science; Electronics and Control Systems; Electronics and Electrical Engineering; Electronics and Instrumentation Engineering; Electronics and Power Engineering; Electronics and Telecommunication; Electronics and Telecommunication Engineering; Electronics and Tele-Communication Engineering; Electronics and Telecommunication Engineering (Technologynician Electronic Radio); Electronics and Telecommunications Engineering; Electronics and Telematics Engineering; Electronics Communication and Instrumentation Engineering; Electronics Design Technology; Electronics Engineering; Electronics Engineering (VLSI Design and Technology); Electronics Instrument and Control; Electronics Instrumentation and Control Engineering; Electronics Technology; Information and Communication Technology; Information Engineering; Information Science and Engineering; Information Science and Technology; Information Technology; Information Technology and Engineering; Robotics and Artificial Intelligence; Software Engineering
		PG	Artificial Intelligence; Artificial Intelligence and Data Science; Biometrics and Cyber Security; Cloud Computing; Communication and Networking; Computational Engineering and Networking (Data Science); Computer and Communication; Computer and Communication Engineering; Computer and information Science; Computer and Information Technology; Computer Engineering; Computer Engineering Software Engineering); Computer Engineering and Application; Computer Engineering and Networking; Computer Hardware and Networking; Computer Network Engineering; Computer Networking; Computer Networking and

			Engineering; Computer Networks; Computer Networks and information Security; Computer Networks and internet Security; Computer Science; Computer Science and Technology; Computer Science and Engineering; Computer Science and Engineering (Artificial Intelligence and Machine Learning); Computer Science and Engineering (Cyber Security); Computer Science and Engineering (Networks); Computer Science and Engineering (Operations Research); Computer Science and Information Security; Computer Science and Information System; Computer Science and Information Technology; Computer Science and Systems Engineering; Computer Science Engineering (Big Data Analytics); Computer Systems and Technology; Computer Technology; Computer Technology and Applications; Computer Vision and Image Processing; Cyber Forensics; Cyber Forensics and information Security; Cyber Security; Cyber Security Systems and Networks; Data Sciences Distributed Computing Systems; Distributed Systems; Information and Communication Technology; Information Engineering; Information Science and Technology; Information Security; Information Security Management; Information Systems; Information Technology; Information Technology (Artificial Intelligence and Robotics); Information Technology (Information and Cyber Warfare); Information Technology and Engineering; Information Technology (Multimedia); Intelligent Systems; Internet of Things; IoT and Sensor Systems; Mobile Computing; Mobile Computing Technology; Multimedia and Software Engineering; Multimedia Technology; Network Engineering; Network Security and Management; Networking; Networking and Internet Engineering; Parallel Distributed Systems; Pervasive Computing Technology; Robotics and Artificial Intelligence; Software Engineering; Software Systems; System and Network Security; System Software
7.	Electrical and Electronics Engineering	**UG**	Electrical and Computer Engineering; Electrical and Electronics Engineering (power systems); Electrical and Electronics Engineering; Electrical and Instrumentation Engineering; Electrical and Power Engineering; Electrical Engineering; Electrical Engineering (Electronics and Power); Electrical, Instrumentation and Control Engineering; Electrical Power Engineering; Electrical, Electronics Power Engineering; Electronics and Electrical Engineering
		PG	Power Systems; Power Electronics; Power Electronics & Drives; Electrical Drives & Control; Electrical Machines; Applied Electronics; VLSI Systems; Wireless Sensor Networks; Knowledge Management; Machine Learning; Internet of Things

			(IoT); Control and Instrumentation; Energy Engineering; High Voltage Engineering; Any emerging area of specialization.
8.	Electronics and Communication Engineering	**UG**	Applied Electronics and Communications; Electronic Engineering; Electronics and Communication (Communication System Engineering); Electronics and Communication Engineering (Advanced Communication Technology); Electronics and Communication Engineering (VLSI Design & Technology); Electronics and Communication Engineering; Electronics and Communication Engineering (Bio-Medical Engineering); Electronics and Communication Engineering (Industry Integrated); Electronics and Communication Engineering (Microwaves); Electronics and Communication Technology; Electronics and Telecommunication; Electronics and Telecommunication Engineering; Electronics and Tele-Communication Engineering; Electronics and Telecommunication Engineering (Technologynician Electronic Radio); Electronics and Telecommunications Engineering; Electronics Communication and Instrumentation Engineering; Electronics Design Technology; Electronics Engineering; Electronics Engineering (VLSI Design and Technology); Electronics Technology; Telecommunication Engineering
		PG	Advanced Communication and information System; Advanced Electronics an Communication Engineering; Applied Electronics and Communication System; Applied Electronics and Communications; Biomedical Instrumentation and Signal Processing; Biomedical Signal Processing and instrumentation; Communication and Information Systems; Communication and Networking; Communication and Signal Process; Communication Control and Networking; Communication Engineering; Communication Engineering and Signal Processing; Communication Networks; Communication Systems; Communication Technology and Management; Communications Engineering; Computer and Communication; Computer and Communication Engineering; Digital Communication; Digital Communication Engineering; Digital Communications; Digital Communications and Networking; Digital Electronics; Digital Electronics and Communication; Digital Electronics and Communication Engineering; Digital Electronics and Communication Systems; Digital Electronics Engineering; Digital Image Processing; Digital Instrumentation; Digital Signal Processing, Digital Systems; Digital Systems and Communications Engineering; Digital Systems and Computer Electronics; Digital Techniques and instrumentation

			; Electronic Circuits and System Design ; Electronic Engineering; Electronics and Communication (Communication System Engineering); Electronics and Communication (Signal Processing and Communication); Electronics and Communication (Signal Processing and VLSI Technology); Electronics and Communication (VLSI Design); Electronics and Communication (VLSI System Design); Electronics and Communication (Wireless Communication Systems and Networks); Electronics and Communication (Wireless Communication Technology); Electronics and Communication Engineering (Advanced Communication Technology); Electronics and Communication Engineering (VLSI Design & Technology); Electronics and Communication Engineering; Electronics and Communication Engineering (Industry integrated); Electronics and Telecommunication Engineering (Radio and System); Electronics and Telecommunication Engineering (Technologynician Electronic Radio); Electronics and Tele-Communication Engineering, Electronics Telecommunications Engineering; Electronics Communication and Instrumentation Engineering; Electronics Design and Technology; Electronics Design Technology; Electronics Engineering; Electronics Product Design and Technology; Electronics Systems and Communication; Electronics Technology; Electronics Tele Communication; Embedded and Real Time Systems; Embedded Control and Automation; Embedded Control Systems; Embedded System and Computing; Embedded System and VLSI; Embedded System and VLSI Design; Embedded Systems; Embedded Systems Technologies; Information and Communication Technology; Information Technology (Multimedia); Integrated Circuits Technology; Micro Electronics; Micro Electronics and Control Systems; Micro Electronics and VLSI Design; Micro Electronics and VLSI Technology; Micro Electronics Engineering; Microelectronics and VLSI Design; Microwave and Communication Engineering; Microwave and Millimeter Engineering; Microwave and Optical Communication; Microwave and Radar Engineering, Microwave and TV Engineering; Microwave Engineering; Microwaves ; Mobile Communication and Network Technology; Mobile Computing; Mobile Computing Technology; Mobile Technology; Modern Communication Engineering; Multimedia and Software Engineering; Multimedia Technology; Nano Science and Technology; Nano Technology; Optical Engineering; Optics and Optoelectronics; Opto-Electronics and Communication; Opto-Electronics and Communication Systems;

			Optoelectronics and Laser Technology; Opto-Electronics Engineering; Opto-Electronics-Optical Communication; Radar and Communication; Radio Frequency and Microwave Engineering; Signal Processing; Signal Processing and Communications; Signal Processing and Embedded Systems; Smart Sensing Communication and Networking Technologies; Telecommunication Engineering; VLSI; VLSI and Embedded Systems; VLSI and Embedded Systems Design; VLSI and Microelectronics; VLSI Design; VLSI Design and Embedded Systems; VLSI Design and Signal Processing; VLSI Design and Testing; VLSI System Design; VLSI Systems; Wired and Wireless Communication; Wireless and Mobile Communications; Wireless Communication and Computing; Wireless Communication Technology; Wireless Communications; Wireless Networks and Applications; Wireless Technology
9.	Energy and Environment (with M.E. / M.Tech. / MS (By Research))	**UG**	Bachelor's Degree in Engineering / Technology or equivalent degree in the appropriate branch of study
			M.Sc. degree in Industrial Chemistry, Advanced Biochemistry, Environmental Management, Instrumentation Technology, Instrumentation and Applied Physics, Environmental Science, Biotechnology, Nano Technology, Material Science, Applied Chemistry, Applied Physics, Industrial Biotechnology, Polymer Science, Applied Electronics.
		PG	M.E. / M.Tech. / MS (by Research) or equivalent degree in Energy Engineering; Thermal Engineering; Applied Mechanics; Manufacturing Engineering; Mechatronics; Aerospace Engineering; Automobile Engineering; Power Electronics & Drive; Power System Engineering; Control & Instrumentation Engineering; Electrical Drives; Data Analytics; Structural Engineering; Environmental Engineering; Infrastructure Engineering & Management; Construction Engineering & Management; Chemical Engineering; Biotechnology; Plastic Engineering; Nanoscience and Technology; Material Science; Metallurgical Engineering; Environmental Management; Solar Energy; High Voltage Engineering; Power Engineering and Management; Ceramic Technology; Petroleum Refinery & Petrochemicals; Polymer Science & Engineering; Industrial Engineering; Mining Engineering; Fuel Technology; Petroleum Engineering; Bioprocess Engineering; Paper and Pulp Engineering or any appropriate branch of study.
	Energy and Environment	**PG**	1. M.Sc. degree in

	(with M.Sc.)		Industrial Chemistry; Environmental Management; Instrumentation Technology; Instrumentation and Applied Physics; Environmental Science; Biotechnology; Nanotechnology; Material Science; Chemistry; Applied Chemistry; Physics; Applied Physics; Industrial Biotechnology; Polymer Science; Applied Electronics; Energy Science Sustainability with a qualified GATE Score / Joint CSIR – UGC NET (Assistant Professor / Admission to Ph.D. only) 2. Applicants having their own fellowships from Joint CSIR – UGC NET JRF / INSPIRE / etc., can apply for Ph.D. in the department relevant to the research grant.
10.	Humanities and Social Sciences	**UG**	-
		PG	1. Masters' degrees in the relevant discipline of Humanities / Social Science / Economics / Business Administration / Commerce / Statistics with a qualified UGC-NET / CAT / AIMA / XAT / MAT score and Master's degree (M.E. / M.Tech.) in Engineering with a qualified GATE score. 2. Masters' degrees in the relevant discipline of Humanities / English / Linguistics / Literature / English Language Teaching with a qualified UGC-NET score. 3. Applicants having their own fellowships from UGC NET JRF / INSPIRE / RGNF (or) other equivalent research fellowships can apply for Ph.D. in the department relevant to the research grant.
11.	Instrumentation and Control Engineering	**UG**	Aerospace Engineering; Applied Electronics and Communications; Applied Electronics and Instrumentation Engineering; Automation and Robotics; Bioelectronics Engineering; Bioinformatics; Biomedical and Robotic Engineering; Biomedical Engineering; Biomedical Instrumentation; Electrical and Computer Engineering; Electrical and Electronics Engineering; Electrical and Instrumentation Engineering; Electrical Engineering; Electrical instrumentation and Control Engineering; Electronic Engineering; Electronic Instrumentation and Control Engineering; Electronic Science and Engineering; Electronics and Biomedical Engineering; Electronics and Communication (Communication System Engineering); Electronics and Communication Engineering (Advanced Communication Technology); Electronics and Communication Engineering; Electronics and Communication Engineering (Bio-Medical Engineering); Electronics and Communication Engineering (Microwaves); Electronics and Communication Technology; Electronics and Computer Engineering; Electronics

			and Computer Science; Electronics and Control Systems; Electronics and Electrical Engineering; Electronics and Instrumentation Engineering; Electronics and Telecommunication; Electronics and Telecommunication Engineering; Electronics and Telematics Engineering; Electronics Communication and Instrumentation Engineering; Electronics Design Technology; Electronics Engineering; Electronics Instrument and Control; Electronics Instrumentation and Control Engineering; Electronics System Engineering; Electronics Technology; • Industrial IoT; Information and Communication Technology; Instrumentation and Control Engineering; Instrumentation and Electronics; Instrumentation Engineering; Instrumentation Technology; Instrument Technology; Manufacturing Process and Automation Engineering; Mechanical and Automation Engineering; Mechanical and Mechatronics Engineering (Additive Manufacturing); Medical Electronics Engineering; Medical Lab Technology; Nano Science and Technology; Nano Technology; Power Electronics and Instrumentation Engineering; Robotics and Artificial Intelligence; Robotics and Automation; Telecommunication Engineering; Other Engineering discipline relevant to Instrumentation and Control Engineering
		PG	Advanced Communication and information System; Advanced Electronics; Advanced Electronics and Communication Engineering; Aero Space Engineering; Aero Space Technology; Applied Electronics; Applied Electronics and Communication System; Applied Electronics and Communications; Applied Electronics and Instrumentation Engineering; Applied instrumentation; Automation and Control Power Systems; Automation and Robotics; Bio Electronics; Biomedical Electronics; Biomedical Engineering; Biomedical Instrumentation; Biomedical Instrumentation and Signal Processing; Biomedical Signal Processing and Instrumentation; Biometrics and Cyber Security; Communication and Information Systems; Communication and Networking; Communication and Signal Process; Communication Control and Networking; Communication Engineering; Communication Engineering and Signal Processing; Communication Networks; Communication Systems; Communication Technology and Management; Communications Engineering; Computer Aided Design Manufacture and Automation; Computer and Communication; Computer and Communication Engineering; Control and Instrument; Control and Instrumentation; Control Engineering; Control System Engineering; Control Systems; Cyber Security; Cyber Security

			Systems and Networks; Design Engineering; Digital Electronics and Communication; Digital Electronics and Communication Engineering; Digital Electronics and Communication Systems; Digital Electronics Engineering; Digital Image Processing; Digital Instrumentation; Digital Signal Processing; Digital Techniques and Instrumentation; Distributed Computing Systems; Electrical and Electronics Engineering; Electrical Drives and Control; Electrical Energy Systems; Electrical Engineering; Electrical Engineering (Instrumentation and Control); Electrical instrumentation and Control Engineering; Electronic Circuits and System Design; Electronic Engineering; Electronic instrumentation and Control Engineering; Electronics and Communication (Communication System Engineering); Electronics and Communication (Signal Processing and Communication); Electronics and Communication (Wireless Communication Systems and Networks); Electronics and Communication (Wireless Communication Technology); Electronics and Communication Engineering (Advanced Communication Technology); Electronics and Communication Engineering; Electronics and Communication Engineering (Industry integrated); Electronics and Electrical Technology; Electronics and Instrumentation Engineering; Electronics and Telecommunications Engineering; Electronics Communication and Instrumentation Engineering; Electronics Design and Technology; Electronics Design Technology; Electronics Engineering; Electronics Product Design and Technology; Electronics Systems and Communication; Electronics Technology; Electronics Tele Communication; Embedded and Real Time Systems; Embedded Control and Automation; Embedded Control Systems; Embedded System and Computing; Embedded Systems; Embedded Systems Technologies; Engineering Analysis and Design; Engineering Design; Image Processing; Industrial Automation and RF Engineering; Industrial Automation and Robotics; Industrial Drives and Control; Industrial Electronics; Industrial Instrumentation and Control; Information and Communication Technology; Instrumentation and Control (Applied Instrumentation); Instrumentation and Control Engineering; Instrumentation and Electronics; Instrumentation Engineering; Instrumentation Technology; Integrated Circuits Technology; Internet of Things; IoT and Sensor Systems; Measurement and Control; Mechanical and Automation Engineering; Mechatronics; Medical Electronics; Micro Electronics; Micro Electronics and Control Systems; Micro Electronics

			and VLSI Technology; Micro Electronics Engineering; Microwave and Communication Engineering; Microwave and Optical Communication; Microwave and Radar Engineering; Microwave Engineering; Mobile Communication and Network Technology; Modern Communication Engineering; Opto-Electronics and Communication; Opto-Electronics and Communication Systems; Opto-Electronics Engineering; Power System Control and Automation; Process Control; Process Control Instrumentation; Process Dynamics and Control; Process instrumentation; Product Design; Product Design and Development; Remote Sensing; Remote Sensing and GIS; Remote Sensing and Wireless Sensor Networks; Robotics and Artificial Intelligence; Robotics and Automation; Robotics and Mechatronics; Sensor Technology; Signal Processing; Signal Processing and Communications; Signal Processing and Embedded Systems; Smart Sensing Communication and Networking Technologies; Systems and Signal Processing; Telecommunication Engineering; Transportation System Engineering; Wired and Wireless Communication; Wireless and Mobile Communications; Wireless Communication and Computing; Wireless Communication Technology; Wireless Communications; Wireless Networks and Applications; Wireless Technology; Other emerging area of specialization related to Instrumentation and Control Engineering
12.	Management Studies	**UG**	-
		PG	1. 2 years full time Master's degree in Business Administration; Management; Humanities; Social Sciences; Commerce, and other relevant discipline; Post Graduate Diploma in Management with a CAT / XAT / MAT / GMAT / UGC-NET score 2. Master's Degree in Engineering / Technology with a qualified GATE / CAT / XAT / MAT / GMAT / UGC-NET (Assistant Professor / Admission to Ph.D. only) 3. Applicants having their own fellowships from UGC NET JRF / INSPIRE / RGNF (or) other equivalent research fellowships can apply for Ph.D. in the department relevant to the research grant.
13.	Mathematics	**UG**	The Bachelor's degree must be of a minimum duration of three years and should include at least six courses in Mathematics and/or Statistics.
		PG	1. M.A. / M.Sc. in Mathematics / Applied Mathematics / Statistics, M. Math. / M. Stat. / M.Tech. in Industrial Mathematics / Scientific Computing with a qualified GATE Score in

			Mathematics / Statistics, Joint CSIR – UGC NET (Assistant Professor / Admission to Ph.D. only) 2. Applicants having their own fellowships from Joint CSIR – UGC NET JRF / NBHM / INSPIRE / etc., can apply for Ph.D. in the department relevant to the research grant.
14.	Mechanical Engineering	**UG**	B.E. / B.Tech. in Mechanical Engineering / Mechanical Engineering Design / Production Engineering / Manufacturing Engineering / Manufacturing Engineering and Technology / Manufacturing Science and Engineering / Manufacturing Technology / Automobile Engineering / Aerospace Engineering / Aeronautical Engineering / Energy Engineering
		PG	M.E. / M.Tech. in Mechanical Engineering / Mechanical Engineering Design / Mechanical System Design / Mechanical – Manufacturing Engineering / Design Engineering / Internal Combustion Engineering / Thermal Engineering / Thermal Power Engineering / Heat and Power / Heat Power Engineering / Refrigeration and Air Conditioning / Cryogenic Engineering / Energy Engineering / Energy and Environmental Engineering / Manufacturing Engineering / CAD/CAM / CAD/CAM/CAE / Machine Design / Fracture Mechanics / Turbo Machinery / Applied Mechanics / Fuel and Combustion / Thermal and Fluid Engineering / Aeronautical Engineering / Automobile Engineering / Industrial Safety Engineering
15.	Metallurgical and Materials Engineering	**UG**	Bachelor's degree in Engineering (Metallurgical and Materials Engineering; Metallurgical Engineering; Metallurgy; Additive Manufacturing; Aeronautical Engineering; Aerospace Engineering; Applied Electronics and Communications; Applied Electronics and instrumentation Engineering; Artificial Intelligence (AI) and Data Science; Artificial Intelligence and Machine Learning; Automobile Engineering; Automotive Technology; Biochemical Engineering; Biomedical Engineering; Biotechnology/ Biotechnology and Biochemical Engineering; Cement and Ceramic Technology; Ceramic Engineering and Technology; Ceramics Engineering; Ceramic Technology; Chemical and Biochemical Engineering; Chemical and Electro Chemical Engineering; Chemical Engineering; Chemical Engineering (Plastic and Polymer); Chemical Technology; Electrical and Electronics Engineering; Electronic Engineering/ Electronics and Biomedical Engineering; Electronics Engineering; Energy and Environmental Management; Energy Engineering; Environmental Engineering; Environmental Science and Engineering/ Industrial and Production Engineering;

			Industrial Biotechnology; Industrial Engineering/ Industrial Engineering and Management; Industrial Production Engineering; Instrumentation and Control Engineering; Instrumentation and Electronics; Instrumentation Engineering; Instrumentation Technology; Manufacturing Engineering; Manufacturing Process and Automation Engineering; Manufacturing Engineering and Technology; Manufacturing Science and Engineering; Manufacturing Technology; Marine Engineering; Marine Technology; Material Science and Technology; Mechanical and Automation Engineering; Mechanical and Mechatronics Engineering (Additive Manufacturing); Mechanical Engineering; Mechanical and Smart Manufacturing; Mechanical Engineering (all disciplines); Mining Engineering; Nano Science and Technology; Nano Technology; Naval Architecture and Ship Building Engineering; Nuclear Science and Technology; Optics and Optoelectronics; Petrochemical Engineering; Petrochemical Technology; Plastic Technology; Polymer Engineering; Plastic and Polymer Engineering; Polymer Engineering and Technology; Polymer Science and Chemical Technology; Polymer Science and Technology; Precision Manufacturing; Production and industrial Engineering; Production Engineering; Production and industrial Engineering; Rubber and Plastics Technology; Rubber Technology; Smart and Sustainable Energy; Tool Engineering; or Equivalent Engineering Degree courses / any other Engineering degree relevant to Metallurgical and Materials Engineering
			PG degree in Science (Physics / Chemistry; Material Science; Applied Science; Applied Physics; Applied Chemistry; Materials Science; or Equivalent Masters Degree courses / any other Masters degree in Science relevant to Metallurgical and Materials Engineering
		PG	With M.Tech. Degree / MS (by Research) in Material Science and Engineering; Welding Engineering; Industrial metallurgy; Artificial Intelligence; Advanced Design and Manufacturing; Advanced Electronics; Advanced Manufacturing and Mechanical Systems Design; Advanced Manufacturing Systems; Advanced Manufacturing Technology; Advanced Materials Technology; Advanced Production Systems; Aero Space Technology; Aeronautical Engineering; Applied Electronics; Applied Electronics and Instrumentation Engineering; Applied Mechanics; Armament Engineering (Gun Fitter); Artificial Intelligence and Data Science; Automated Manufacturing Systems; Automobile Engineering;

			Automobile Technology; Automotive Technology/ Bio Electronics; Biochemical Engineering; Biochemical Engineering and Biotechnology; Biomedical Engineering; Biomedical Instrumentation; Biotechnology; Ceramic Engineering and Technology; Ceramics Engineering; Chemical and Biotechnology; Chemical Engineering; Chemical Reaction Engineering; Chemical Science and Technology; Chemical Technology; Chemical Technology (Rubber/ Plastic); CAD/CAM/CAE; Combat Vehicles (Mechanical Engineering); Computational Analysis in Mechanical Science; Computational Mechanics; Computer Aided Design; Computer Aided Design and Manufacture; Computer Science and Engineering (Artificial Intelligence and Machine Learning); Defence Technology; Design and Production; Industrial and Production; Design and Thermal Engineering; Design Engineering; Design for Manufacturing; Electric Vehicle Technology; Electrical and Electronics Engineering; Electrical and Mechanical Engineering; Electronic Engineering; Electronics and Electrical Technology; Electronics Design and Technology; Energetic Materials and Polymers; Energy Engineering; Energy Science and Technology; Engineering Analysis and Design; Engineering and Management; Engineering Design; Environmental Engineering; Environmental Science and Engineering; Foundry and Forge Technology; Fracture Mechanics; Gas Turbine Technology; Heat Power and Thermal Engineering; Image Processing; Industrial Electronics; Instrumentation and Electronics; Laser and Electro Optics; Laser Technology; Lean Manufacturing Engineering; Machine Design and Robotics; Manufacturing Engineering; Manufacturing Process and Automation Engineering; Manufacturing Science and Engineering; Manufacturing Technology; Manufacturing Technology and Automation; Materials Engineering; Material Engineering (Nanotechnology); Material Science and Chemical Technology/ Material Science and Technology; Materials Engineering; Mechanical Engineering; Mechanical Engineering (all specializations) / Mechanical and Materials Technology; Mechanical Welding and Sheet Metal Engineering; Mechanical-Manufacturing Engineering; Mechanical-Product Life Cycle Management; Mechatronics; Medical Electronics; Metallurgy; Metallurgical and Materials Engineering; Metallurgy and Material Technology; Micro and Nano Electronics; Micro Electronics and Control Systems; Mining Engineering; Modeling and Simulation; Nano Science and Technology; Nano Technology; New Material Process and Technology;

			Nuclear Science and Technology; Optics and Optoelectronics; Opto-Electronics Engineering; Paint Technology; Petrochem and Petroleum Refinery Engineering; Petrochemical Technology; Physical Metallurgy; Plastics Engineering; Plastics Processing and Testing; Polymer Engineering; Polymer Nanotechnology; Polymer Science and Technology; Process Control; Process Control instrumentation; Product Design and Manufacturing; Product Design and Development; Production and Industrial Engineering; Production Design and Manufacturing; Production Engineering; Production Engineering and Engineering Design; Production Technology and Management; Process Metallurgy; Renewable Energy; Scientific Computing; Solar Energy; Surface Coating Technology; Thermal and Fluid Engineering; Thermal Engineering; Thermal Power Engineering; Thermal Science Engineering; Thermal Sciences and Energy Systems; Thermal Systems and Design; Tool Design; Tool Engineering; Tribology and Maintenance; Weapons Engineering; Equivalent Master's degree in Engineering / any other Master's degree in Engineering relevant to Metallurgical and Materials Engineering
16.	Physics	**UG**	-
		PG	1. Master degree in Physics / Applied Physics / Materials Science / Applied Electronics with a valid GATE Score / JEST / Joint CSIR – UGC NET (Assistant Professor / Admission to Ph.D. only) 2. M. Tech. in Non-Destructive Testing / Materials Science, with a qualified GATE score. 3. Applicants having their own fellowships from Joint CSIR – UGC NET JRF / INSPIRE / etc., can apply for Ph.D. in the department relevant to the research grant.
17.	Production Engineering	**UG**	Additive Manufacturing; Advanced Mechatronics and industrial Automation; Apparel and Production Management; Artificial Intelligence (AI) and Data Science; Artificial Intelligence and Machine Learning; Automation and Robotics; Automation Engineering; Automotive Technology; Ceramic Engineering and Technology; Digital Techniques For Design and Planning; Facilities and Services Planning; Fibres and Textiles Processing Technology; Industrial and Production Engineering; Industrial Engineering and Management; Industrial IoT; Industrial Production Engineering; Logistics & Supply Chain Management; Manufacturing Engineering; Manufacturing Engineering and Technology; Manufacturing Process and Automation Engineering; Manufacturing Science and Engineering; Manufacturing Technology;

			Material Science and Technology; Mechanical and Automation Engineering; Mechanical and Mechatronics Engineering (Additive Manufacturing); Mechanical and Smart Manufacturing; Mechanical Engineering; Mechanical Engineering (Automobile); Mechanical Engineering (Industry Integrated); Mechanical Engineering (Manufacturing Engineering); Mechanical Engineering (Production); Mechanical Engineering (Welding Technology); Mechanical Engineering Design; Mechatronics Engineering; Nano Science and Technology; Nano Technology; Plastic and Polymer Engineering; Plastic Technology; Plastics Engineering; Polymer Engineering; Polymer Engineering and Technology; Polymer Science and Chemical Technology; Polymer Science and Technology; Polymer Technology; Precision Manufacturing; Printing and Packing Technology; Production and industrial Engineering; Production Engineering; Robotics and Artificial Intelligence; Robotics and Automation; Rubber and Plastics Technology; Surface Coating Technology
		PG	Artificial Intelligence; Advanced Computer Aided Design; Advanced Design and Manufacturing; Advanced Manufacturing and Mechanical Systems Design; Advanced Manufacturing Systems; Advanced Manufacturing Technology; Advanced Materials Technology; Advanced Production Systems; Automated Manufacturing Systems; Automation; Automation and Control Power Systems; Automation and Robotics; CAD/CAM; CAD/CAM Engineering; CAD/CAM Robotics; CAD/CAM/CAE; Ceramic Engineering and Technology; Ceramics Engineering; Computational Analysis in Mechanical Science; Computational Mechanics; Computational Mechanics (Mechanical Engineering); Computer Aided Analysis and Design; Computer Aided Design; Computer Aided Design and Computer Aided Manufacture; Computer Aided Design and Manufacture; Computer Aided Design; Manufacture and Automation; Computer Aided Design; Manufacture and Engineering; Computer Aided Design of Structures; Computer Aided Process Design; Computer Aided Structural Analysis and Design; Computer integrated Manufacturing; Data Engineering; Data Sciences; Defence Technology; Design and Production; Design and Thermal Engineering; Design Engineering; Design for Manufacturing; Design of Mechanical Equipment; Design of Mechanical Systems; Engineering Analysis and Design; Engineering and Management; Engineering Design; Foundry and Forge Technology; Fracture Mechanics; Gas Turbine Technology; Image Processing; Industrial and Production Engineering;

			Industrial Automation and RF Engineering; Industrial Automation and Robotics; Industrial Engineering; Industrial Engineering and Management;Industrial Intelligent Systems; Industrial Metallurgy; Intelligent Systems; Internet of Things;IoT and Sensor Systems; Laser and Electro Optics; Laser Technology; Lean Manufacturing Engineering; Logistics & Supply Chain Management; Machine Design; Machine Design and Robotics; Maintenance Engineering; Manufacturing and Automation; Manufacturing Engineering; Manufacturing Engineering and Automation; Manufacturing Engineering and Management; Manufacturing Engineering and Technology; Manufacturing Process; Manufacturing Process and Automation Engineering; Manufacturing Science and Engineering; Manufacturing Systems and Management; Manufacturing Systems Engineering; Manufacturing Technology; Manufacturing Technology and Automation; Material Engineering; Material Engineering (Nanotechnology); Material Handling; Material Science and Chemical Technology; Material Science and Engineering; Material Science and Technology; Materials Engineering; Measurement and Control; Mechanical (Computer Aided Design, Manufacture and Engineering); Mechanical (Computer Integrated Manufacturing); Mechanical and Automation Engineering; Mechanical and Materials Technology; Mechanical Engineering; Mechanical Engineering (CAD); Mechanical Engineering (CAD/ CAM); Mechanical Engineering (Cyber Physical Systems); Mechanical Engineering (Energy System and Management); Mechanical Engineering (Industry Integrated); Mechanical Engineering (Manufacturing Technology); Mechanical Engineering (Production); Mechanical Engineering Design; Mechanical Engineering Production; Mechanical Engineering-Product Design and Development; Mechanical System Design; Mechanical Welding and Sheet Metal Engineering; Mechanical-Manufacturing Engineering; Mechanical-Product Life Cycle Management; Mechatronics; Metallurgical and Materials Engineering; Metallurgical Engineering; Metallurgy; Metallurgy and Material Technology; Nano Science and Technology; Nano Technology; Network Engineering; Network infrastructure Management; Network Security and Management; Networking; Networking and Internet Engineering; Neural Networks; New Material Process and Technology; Plastic Engineering; Plastics Engineering; Plastics Processing and Testing Plastics Technology; Polymer Engineering; Polymer Nanotechnology; Polymer Science and Engineering; Polymer Science and Technology; Polymer

			Technology; Process Metallurgy; Product Design; Product Design and Development; Product Design and Manufacturing; Production and Industrial Engineering; Production Design and Manufacturing; Production Engineering; Production Engineering and Engineering Design; Production Engineering System Technology; Production Management; Production Technology; Production Technology and Management; Quality Engineering and Management; Robotics and Artificial Intelligence; Robotics and Automation; Robotics and Mechatronics; Surface Coating Technology; System and Network Security System Management; Tool Design; Tool Engineering; Tribology and Maintenance; Industrial Area Planning and Management

APPENDIX-1

Suggested Time-line for Lateral Ph.D. programme

Semester 1	
Month	**Activity**
1.	Admission, Guide Allocation, Formation of DC, DC Meet 1, Course work begins
2.	Course work, periodic meeting with the guide
3.	Course work, periodic meeting with the guide
4.	Course work, periodic meeting with the guide
5.	At least 75% course work to be completed
6.	Begin Literature Review
Semester 2	
Month	**Activity**
1.	DC Meet 2, Course work continues
2.	Course work, periodic meeting with the guide
3.	Course work, periodic meeting with the guide
4.	Course work, periodic meeting with the guide
5.	Course work to be completed
6.	Consolidate Literature Review, Prepare for Comprehensive Examination

Semester 3	
Month	**Activity**
1.	DC Meet 3,
2.	Comprehensive Examination; candidate's performance may be unsatisfactory, and can be given another attempt in Semester 4
3.	Begin submitting International Conf papers
4.	Research work continues
5.	Research work continues
6.	Explore a review paper for a journal
Semester 4	
Month	**Activity**
1.	DC Meet 4,
2.	Research work and Plans for the first Journal paper
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	Research work continues
6.	Research work continues
Semester 5	
Month	**Activity**
1.	DC Meet 5,
2.	Research work and Plans for the second Journal paper
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	Research work continues
6.	Research work continues, Submit 2nd conference paper

Semester 6	
Month	**Activity**
1.	DC Meet 6,
2.	Research work continues
3.	Progress Review Seminar in the Department
4.	Responding to reviewers' comments on journal papers
5.	Research work continues
6.	Ensure at least 1 paper is accepted for publication
Semester 7	
Month	**Activity**
1.	DC Meet 7, to ensure submission of synopsis by semester-end
2.	Research work continues
3.	Progress Review Seminar in the Department
4.	Responding to reviewers' comments on journal papers
5.	Ensure at least 2 papers are accepted for publication
6.	Submission of synopsis
Semester 8	
Month	**Activity**
1.	DC Meet 8, to ensure synopsis is submitted and that the thesis would be submitted by semester-end
2.	Research work continues
3.	Progress Review Seminar in the Department Submission of thesis
4.	
5.	
6.	
Semester 9	
Month	**Activity**
1.	DC Meet 9, to review the delay beyond 4 years, and ensure submission of the synopsis and the thesis by semester-end
2.	Research work/Journal paper revisions/Synopsis writing continues
3.	Submission of synopsis Thesis writing in progress Submission of thesis
4.	
5.	
6.	
Semester 10	
Month	**Activity**
1.	DC Meet 10, with an external expert to be nominated by HoD and approved by Dean to seriously review the delay, and ensure submission of the synopsis and the thesis by semester-end
2.	Submission of synopsis Submission of thesis
3.	
4.	
5.	
6.	

Suggested Time-line for Direct Ph,D, programme

Semester 1	
Month	**Activity**
1.	Admission, Guide Allocation, Formation of DC, DC Meet 1, Course work begins along with the relevant M.Tech. / M,Arch, specialization
2.	Course work not less than Minimum Credit for the relevant courses (40 credits for M.Tech. and 36 credits for M.Arch..) comprises Core courses of the relevant MTech./M.Arch. specialization Courses recommended by Doctoral Committee Other Electives
3.	
4.	
5.	
6.	
Semester 2	
Month	**Activity**
1.	DC Meet 2, Course work continues
2.	Periodic meeting with the guide Commence Literature Review Course work to be completed
3.	
4.	
5.	
6.	
Semester 3	
Month	**Activity**
1.	DC Meet 3, register for Research Methodology course
2.	Continue Literature Review Commence preliminary research work as a short-term project Periodic meeting with the guide Evaluation of the Project for 12 credits in the presence of doctoral committee and external examiner
3.	
4.	
5.	
6.	
Semester 4	
Month	**Activity**
1.	DC Meet 4,
2.	Research work continues (short-term project) At least 1 Conference paper to be presented, explore a review paper for a journal Evaluation of the Project for 12 credits in the presence of doctoral committee and external examiner Exit option with MTech degree in relevant specialization
3.	
4.	
5.	
6.	
Semester 5	
Month	**Activity**
1.	DC Meet 5,
2.	Comprehensive Examination; candidate's performance may be unsatisfactory, and can be given another attempt in Semester 6
3.	Begin submitting International Conf papers
4.	Research work continues
5.	Explore a review paper for a journal
6.	Research work continues

Semester 6	
Month	**Activity**
1.	DC Meet 6,
2.	Research work and Plans for the first Journal paper
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	At least 1 Journal paper to be submitted
6.	Research work continues
Semester 7	
Month	**Activity**
1.	DC Meet 7,
2.	Research work and Plans for the second Journal paper
3.	Progress Review Seminar in the Department
4.	Research work continues,
5.	At least 2nd Journal paper to be submitted
6.	Research work continues, Submit 2nd conference paper
Semester 8	
Month	**Activity**
1.	DC Meet 8,
2.	Research work continues
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	Research work continues
6.	Ensure at least 1 paper is accepted for publication
Semester 9	
Month	**Activity**
1.	DC Meet 9, to ensure submission of synopsis by semester-end
2.	Research work continues
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	Ensure at least 2 papers are accepted for publication
6.	Submission of synopsis
Semester 10	
Month	**Activity**
1.	DC Meet 10, to ensure synopsis is submitted and that the thesis would be submitted by semester-end
2.	Research work continues
3.	Progress Review Seminar in the Department Submission of thesis
4.	
5.	
6.	

Suggested Time-line for Integrated Ph.D. programme

Semester 1 (PG level course already over)	
Month	**Activity**
1.	Course work not less than Minimum Credit for the relevant courses with each course not having grade less than C
2.	
3.	
4.	
5.	
6.	
Semester 2 (PG level course already over)	
Month	**Activity**
1.	Course work not less than Minimum Credit for the relevant courses with each course not having grade less than C (minimum CGPA of 8.5 upto 2nd semester i.e. CGPA ≥8.5)
2.	
3.	
4.	
5.	
6.	
Semester 3	
Month	**Activity**
1.	Integrated PhD Admission, Guide Allocation, Formation of DC, DC Meet 1, Short term project begins along with the relevant M.Tech./M.Arch. specialization DC Meet 1, register for Research Methodology course
2.	Continue Literature Review
3.	Commence preliminary research work as a short-term project Periodic meeting with the guide
4.	
5.	Evaluation of the Project for 12 credits in the presence of doctoral committee and external examiner (not having grade less than C)
6.	
Semester 4	
Month	**Activity**
1.	DC Meet 2,
2.	Research work continues (short-term project)
3.	At least 1 Conference paper to be presented, explore a review paper for a journal
4.	Evaluation of the Project for 12 credits in the presence of doctoral committee and external examiner (not having grade less than C)
5.	
6.	Exit option with MTech degree in relevant specialization
Semester 5	
Month	**Activity**
1.	DC Meet 3, candidate should obtain an overall grade not less than B (CGPA ≥8.0) in their course work (M Tech level courses completed before joining Integrated PhD) and short-term projects with each course and short-term project not having grade less than C.
2.	Comprehensive Examination; candidate's performance may be unsatisfactory, and can be given another attempt in Semester 6
3.	Begin submitting International Conf papers

4.	Research work continues
5.	Explore a review paper for a journal
6.	Research work continues
Semester 6	
Month	**Activity**
1.	DC Meet 4,
2.	Research work and Plans for the first Journal paper
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	At least 1 Journal paper to be submitted
6.	Research work continues
Semester 7	
Month	**Activity**
1.	DC Meet 5,
2.	Research work and Plans for the second Journal paper
3.	Progress Review Seminar in the Department
4.	Research work continues,
5.	At least 2nd Journal paper to be submitted
6.	Research work continues, Submit 2nd conference paper
Semester 8	
Month	**Activity**
1.	DC Meet 6,
2.	Research work continues
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	Research work continues
6.	Ensure at least 1 paper is accepted for publication
Semester 9	
Month	**Activity**
1.	DC Meet 7, to ensure submission of synopsis by semester-end
2.	Research work continues
3.	Progress Review Seminar in the Department
4.	Research work continues
5.	Ensure at least 2 papers are accepted for publication
6.	Submission of synopsis
Semester 10	
Month	**Activity**
1.	DC Meet 8, to ensure synopsis is submitted and that the thesis would be submitted by semester-end
2.	Research work continues
3.	Progress Review Seminar in the Department Submission of thesis
4.	
5.	
6.	

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