

Ph.D. Ordinance

2015-16 Academic Session onwards



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्था)

(An autonomous Institute under the aegis of Ministry of HRD, Govt. of India)

सेक्टर ए-७, इन्स्टीटूशनल एरिया, नरेला, दिल्ली-११००४०, भारत

Sector A-7, Institutional Area Narela, Delhi-110040, INDIA

Overview of Institute's Ph.D. Programme

The institute, apart from establishing a robust teaching environment, is keen to facilitate and support cutting-edge research in a variety of areas. This aspect will enable the students to acquaint themselves with the latest developments in their respective areas of study and to pursue their own research interests. This will also result in a constant revision of the contents of the courses that are being taught. The institute has already started its Ph.D. programme, so that the research environment is further augmented, expanded, and made even more vibrant.

The Institute offers Ph.D. programme in a wide range of areas in Sciences, Engineering, and Humanities & Social Sciences. The broad objective of the Ph.D. programme is not only to keep pace with the expanding frontiers of knowledge but also to provide research training relevant to the present social and economic objectives of the country. The academic programme leading to the Ph.D. degree is broad-based and involves a minimum course credit requirement, comprehensive procedure, synopsis seminar and thesis submission. The Institute also encourages research in interdisciplinary areas through a system of joint supervision and interdepartmental group activities. The presence of highly motivated research oriented faculty members provides excellent opportunities for such programmes. The Institute undertakes sponsored research and development projects from industrial and other organizations in public as well as private sector.

Areas of Research

Areas of research work leading to a Ph.D. degree are presently available in the following departments:

i. Department of Applied Sciences

Areas of Research:

- **Mathematics:** Hydrodynamic stability, Fluid instabilities in porous media, Computational fluid dynamics (Ocean wave height analysis), Hazards ocean wave (Linear and nonlinear wave), Modeling and simulation of wave induced oscillation in coastal region, Numerical analysis of partial differential equations, Domain decomposition methods, Fractional partial differential equations
- **Physics:** MHD Simulations, Nonlinear phenomena, Plasma physics, Digital holography, Holography, Biomedical optical instrumentation, Optical metrology, Nano-Plasmonics, Optical Sensors and Biosensors, Computational lithography, Photonic Device Modelling, Technology Management
- **Chemistry:** MOF Chemistry, Coordination Chemistry, Organic Chemistry, Medicinal Chemistry, Material Chemistry, Green Chemistry, Porous Materials

ii. Department of Computer Science and Engineering

Areas of Research: Wireless Sensor Network, Web Analysis, Complex Network, Recommender System, Community Detection, Dynamic Networks

iii. Department of Electronics and Communication Engineering

Areas of Research: Semiconductor Devices; Electronic Circuits & Devices; Optoelectronics & Optical Communication, Nanophotonics. Image and Video Processing, Wireless Communication

iv. Department of Electrical and Electronics Engineering

Areas of Research: Power Quality, Power Electronics and Drives, Application of Power Electronics to Renewable Energy, Power Electronic Converters and their control, Control Systems, Image Processing and Pattern Recognition

v. Department of Humanities and Management

Areas of Research: Economics

vi. Department of Mechanical Engineering

Areas of Research: Numerical Simulation, Rupture, Mechanics of Materials

1. Minimum/Additional Educational Qualifications for Admission:

1.1 Ph.D. in Engineering Discipline:

Minimum Requirement: Master's Degree in Engineering/Technology in the relevant area of research along with Bachelor's Degree in appropriate branch of Engineering/Technology with a minimum of 60% marks or equivalent Cumulative Grade Point Average (CGPA) at Post Graduate and/or Bachelor's levels.

1.2 Ph.D. in Sciences:

Minimum Requirement: Master's Degree in appropriate branch of Science with a minimum of 60% marks or equivalent CGPA at Master's and/or Bachelor's levels. **Additional Requirement:** Candidates must also have GATE score/ CSIR/ UGC/ NBHM award/fellowship for full-time Ph.D.

1.3. Ph.D. in Humanities/ Management:

Minimum Requirement: Master's Degree in appropriate branch of Humanities/Social Sciences/ Management with a minimum of 60% marks or equivalent CGPA at Master's and/or Bachelor's levels. **Additional Requirement:** Candidates must also have UGC award/fellowship for full-time Ph.D.

Note:

- i. A candidate who has obtained research scholarship on the basis of GATE score/ CSIR/ UGC/ NBHM fellowship will also have to qualify the institute written test and interview for admission to Ph.D. programme.
- ii. 60% is equivalent to CGPA of 6.5 in 10 point scale and 55% is equivalent to CGPA of 6.0 in 10 point scale.
- iii. Relaxation in minimum Percentage/Equivalent Grade Point requirements will be given as per the National Reservation Policy of Govt. of India.

2. Student Categories

The students admitted to the Ph.D. Programme shall be classified under any one of the following categories:

2.1 Full time Research Scholar

2.1.1. *Research Scholar (RS)*

Students under this category are entitled for financial assistance as per the latest MHRD norms and will be governed by NIT Delhi and MHRD rules & regulations as effective from time to time.

2.1.2. *Research Scholar through Project (RSP)*

The admission procedure and other requirements for research Fellows (JRFs/SRFs) in various projects/schemes in the institute who wish to enroll for the Ph.D. programme are the same as applicable to research scholars. However, they will be paid Assistantship/fellowships as per the norms of the project and sanctioned amount.

2.1.3. *Research Scholar through Govt./ Semi Govt. Fellowship Award (RSFA)*

These candidates are financially supported under various Govt./Semi Govt. schemes (CSIR, UGC, DAE, DST, DBT, NBHM, etc.) or by some other organizations. The admission procedure and other requirements are same as applicable to RS in 2.1.1. The additional qualification may be exempted.

2.1.4. *Research Scholar through Sponsorship (RSS)*

These candidates are sponsored by recognized Government/Semi-Government R&D organizations for doing research work in the Institute. Candidates are expected to be released for full time research work by the parent organization in order to meet the minimum residential requirements. They will not receive any financial support from the Institute. Sponsorship letter should be brought at the time of written test and/ or interview. The additional qualification may be exempted.

An organization having signed research collaboration (MoU) with NIT Delhi may also sponsor a candidate, in such cases minimum residential requirements may be met at NIT Delhi or collaborative institute. .

2.1.5. *Research Scholar through Self Finance / Study Leave (RSSF) (Indian Nationals/ Foreign Nationals)*

2.1.5.1. **Indian Nationals:** This category refers to persons with good academic record and experience to join in the doctoral programme. They are admitted through the usual admission procedure but they would not get any financial support from the Institute. If admitted, these students have to complete their programme within prescribed duration as specified in Section-7.

2.1.5.2. **Foreign Nationals:** These students are admitted through Embassy of the respective country after getting approval from the Ministry of External Affairs and No Objection Certificate from MHRD.

2.1.5.3. **On Study Leave:** This category refers to candidates who are released from the Government or Educational Institutions on study leave for a period not less than three years for doing research work at the Institute.

If selected, Employer's endorsement letter / NOC for Study Leave should be submitted at the time of joining the Ph.D. programme.

2.1.6. Research Scholar through Foreign Nationals with Indian Council for Cultural Relation Award (RSICCR): These students are sponsored and awarded scholarship by their respective Governments. They should apply for admission to Institute's Ph.D. programme through Indian Embassy in their country.

2.2. Part Time Research Scholar

2.2.1. Institute Staff (IS)

This category is only for the persons employed as Institute Staff at NIT Delhi on regular basis.

- i. Admission will be on the basis of written test and interview as applicable to the concerned programme.
- ii. If a candidate is registered under this category but is not continuing his/her service in the institute he/she may be considered under the RSSF and not under this category.

2.2.2 Project Staff (PS)

This category refers to candidates employed at NIT Delhi as a part of sponsored projects undertaken by the Institute and admitted to the Ph.D. programme, if the duration of the Project at the time of admission is atleast 3 years or more. Under this category the research scholar will be governed by the pre-determined norms as mentioned in the project.

2.2.3 External candidates, sponsored by recognized R&D organizations (EX)

- i. The candidates employed in recognized R&D organizations may apply for Ph.D. programme as external candidates at NIT Delhi while remaining in employment. These candidates will be allowed to register for Ph.D. with a Supervisor (internal) as decided by NIT Delhi and a Joint-supervisor (external) from their parent organization.
- ii. At the time of test/interview, the candidate has to submit a Sponsorship Certificate from the organization in which she/he is employed giving an undertaking that the candidate would be released from the normal duties to complete the course work and the mention of available facilities relevant to the research programme.
- iii. To promote interaction and association among the Institute Faculty and concerned external organization, a meeting between the internal and external supervisors should be arranged at least once in a year to ensure continuous dialogue and participation.
- iv. The option of external registration is for applicants who are working in well equipped scientific institutions, laboratories, R&D establishments and industrial organizations engaged in research based activities and having collaboration with NIT Delhi and other educational institutes not considered otherwise.

3. Admission Process

Advertisement for admission to the Ph.D. programme may be published on the website/newspapers (two times in a year) depending upon the vacancy in the department/centre and availability of research supervisor(s). The advertisement may/may not include the predetermined number of seats and as per the guidelines of reservation policy of Government of India. A candidate interested in applying in more than one department/ category shall be required to submit separate application forms along with

prescribed fees and documents. The candidate shall be required to submit a write-up (1-2 pages) of his/her proposed area of research along with the application form.

3.1. Screening Committee:

A Screening Committee for each department will be formed by the respective Head of Department (HoD). An additional member holding Ph.D. degree from the centrally funded institution/ university/ research laboratory of Government of India/ Public Sector undertakings/state funded university/institution or of collaborative organization/ Industries/ Institutes (Indian/Foreign) may also be included in the committee. The committee shall screen all applications for admission to Ph.D. programme. The committee shall verify the eligibility of the applicant(s) for the programme/ entrance test based upon the details mentioned in the application(s) and the enclosed documents. The committee will have the right to fix higher short listing criterion (in addition to minimum qualification) for short listing. After screening of applications, the HoD shall forward the list of candidates eligible for written test to Dean (R&C). The Dean (R&C) shall then consolidate the list of all the departments and notify the eligible applicants through appropriate means with the approval of competent authority.

3.2. Entrance Test

All the eligible candidates shall be required to appear in a National Level Written Test to be organized by NIT Delhi. The written Test may be of Multiple Choice Question (MCQ) Mode. A candidate securing atleast 40% marks in the Entrance test shall be declared qualified in the test. The syllabus for the written test will be the same as latest GATE/NET syllabus in related branch of Engineering/Technology/Science/Humanities.

3.3. Interview

The eligible candidates who have qualified the written Test shall be called for the interview. At the time of interview, candidates may be asked to discuss their research interest/area in the form of presentation.

3.3.1 Interview Committee:

The Interview Committee may be comprised of following:

1. Director / Director Nominee
2. Head of the concerned department
3. Faculty members of the concerned department/other department(s) having Ph.D. degree.
4. Person(s)* from the collaborative organizations/ industries/ institutes (Indian/ Foreign) who have been approved to act as supervisor.

Keeping in view the available seats, the Interview Committee will prepare and submit provisional list of candidates recommended for admission to Ph.D. Programme for the approval of Director through office of Dean (R&C). The office of Dean (R&C) shall notify the list of selected candidates through appropriate means.

3.4. Reservation:

The reservation rules will be followed as per Government of India guidelines prevailing at the time of admission. Category (General/OBC/SC/ST/PH) once chosen by the applicant in his/her application form shall not be changed at a later stage. Candidate(s) claiming any

* Persons from collaborative organizations/industries/institutes (Indian/Foreign) may join for the interview through NKN or Skype or any other ICT mode.

reservation category (OBC/SC/ST/PH) shall attach a valid caste certificate, not older than six months on the last date of advertisement, along with the application.

4. Admission

Candidates, whose selection is recommended by the Interview Committee and approved by Director shall be offered admission and advised to deposit prescribed fees. For all purposes, the date of registration of a Research Scholar shall be the date on which she/he has deposited fee in the institute.

5. Registration

Following are the guidelines for registration in Ph.D. programme:

- i. She/he is required to register himself/herself (in person) on the scheduled dates of registration. There shall not be any provision of deputing any representative by him/her for registration purposes. Further, she/he shall be required to register in all subsequent semesters till the submission of Ph.D. thesis.
- ii. She/he is required to fill the registration form and submit it to the DPGC convener.
- iii. She/he shall deposit the requisite fee in the accounts section at the time of registration in every semester.
- iv. The act of non-depositing of fees and/or not-completing the registration process as mentioned above on the scheduled dates shall be treated as the 'voluntary discontinuation' of studies by the Research Scholar. In such case, she/he will cease to be a bonafide student with immediate effect.
- v. Late registration with the prescribed late fee may be allowed as specified in the academic calendar. However under special circumstances, the period may be relaxed by Director/Dean (R&C). The candidate is required to follow the registration rules till she/he submits Ph.D. thesis.
- vi. The above instructions for registration shall be applicable to all Research Scholars admitted in the institute.
- vii. Candidate need to produce Medical Fitness Certificate from a Govt. Hospital at the time of admission.

Note: Form PH.D.-I shall be used for this purpose

6. Research Guidance

6.1. Ph.D. Supervisor:

At least one supervisor of the research scholar shall be from NIT Delhi. A Faculty Member/ Officer/ Scientist of NIT Delhi with Ph.D. degree can act as supervisor.

6.1.1. In case of demise/ any other casualty, the Research Scholar registered under a supervisor shall be transferred to other suitable supervisor(s) in the department subject to the approval of RAC, DPGC, and IPGC.

6.1.2. If a supervisor gets transferred/ re-employed/ deputation/ lien in other department/ workplace/ centre or retires/ resigns/ proceeds on long leave from the institute (more than 06 months) through lien/ deputation/ sabbatical to join other institute then he/she shall continue supervising the Research Scholar in the department where Research Scholar is initially registered. In case the Supervisor is likely to be superannuated within five (5) years from the date of registration of a Research Scholar, he/she shall be allowed to act as supervisor if there is one more regular faculty member from the same department to act as joint supervisor.

6.2. Co-Supervisor:

Depending upon the nature of the research problem, other supervisor(s) may be allowed in addition to the main supervisor. In such case, maximum two other supervisor(s) may be approved by Chairman Senate. The Co-Supervisor (in-service or retired) can be from a centrally funded institution/ university/ research laboratory of Government of India/ Public Sector undertakings/state funded university/institution or of collaborative organization/ Industries/ Institutes (Indian/Foreign). Depending upon the research area highly eminent professors/scientists (retired) working in private organization may also be considered as co-supervisor. The application for co-supervisor must be supported with the detailed CV of the proposed co-supervisor(s) (Channel for approval of co-supervisor: Supervisor - DPGC convener - HoD - Dean (R&C) - Chairman Senate). The consent (on the official letter head) of the proposed co-supervisor(s) shall be forwarded to IPGC through proper channel for consideration. The request for appointment of Co-supervisor(s) may be entertained within 18 months of the first registration of the research scholar. In order to promote inter-disciplinary research in the institute, joint supervisors may also be appointed from other departments of NIT Delhi.

Note: If there are more than one supervisor(s) from NIT Delhi, then all will be called as Supervisor(s). However, any supervisor(s) from outside NIT Delhi will be called as co-supervisor(s).

6.3. Change of Supervisor(s):

Any request for change of supervisor(s) is highly discouraged and may only be considered under evidently exceptional circumstances only within 18 months of first registration. The request for change of supervisor(s) will be channeled through Chairman RAC to DPGC convener with his/her recommendations on the basis of statements of / discussion with supervisor(s) as well as research scholar. The DPGC convener will then discuss the matter within DPGC and will forward it to IPGC convener with clear recommendations. IPGC will then take the final decision on such cases.

However, in such cases, the consent of both, i.e. present supervisor and proposed (new) supervisor shall be essential.

6.4. Limit on number of Research Scholars

The number of research scholars with a supervisor and/or joint-supervisor shall not exceed eight (08) at any given time. The full weightage for each supervisor/joint-supervisor will be counted in case of joint supervision. A faculty member/ officer can act as a supervisor for research scholars registered with any other Institute/University after getting approval from the Director provided the institute work does not suffer due to the same.

6.5. Appointment of Research Supervisor

Following shall be the procedure for appointment of supervisor(s) for any Research Scholar:

- i. After first registration Research Scholar has to convey desired Research Area(s) to DPGC convener.
- ii. DPGC convener will suggest to Research Scholar the names of faculty member(s) working / interested to guide Research Scholar in that area.
- iii. After interacting with the faculty member(s), Research Scholar will communicate his/her choice of supervisor(s) to DPGC convener.
- iv. DPGC shall appoint the Supervisor for Research Scholar after consent of Supervisor and Research Scholar

- v. All the above process should be completed within 3 Months of first Registration.

Note: Form PH.D.-II (A, B & C) shall be used for this purpose.

7. Duration of Ph.D. Programme

The minimum period of residential requirement for study and research at the institute from the date of first registration to the date of submission of synopsis shall be 36 months for full-time and till course work completion for part-time research scholar. A candidate is normally expected to submit his/her thesis within 4 years from the date of first registration. However, this period may be extended to a maximum of 2 more years (on semester to semester basis in 6th year) by IPGC on the recommendations of supervisor(s), RAC and DPGC respectively. The maximum duration of thesis submission will be seven years for a research scholar admitted as a part-time student. However, maximum duration will remain six years for research scholar admitted as full-time student and later converting to part-time.

8. Course Work

8.1 Minimum Credit and CGPA Requirements

- Every external/ internal research scholar (Full Time/ Part time) admitted under Ph.D. Programme is required to pass the course work approved by RAC & DPGC within first two semesters only. For credit requirements see table given below in 8.2 for details.
- Research Scholar must secure a minimum of 7.5 CGPA for clearing the course work. Only successful Ph.D. candidates will be allowed to continue in the Ph.D. programme. The relative grading system similar to M. Tech. programme shall also be applicable to Ph.D. programme.
- If a research scholar fails to get a CGPA of 7.5 at the end of the course work, she/he may be allowed **only once** to appear in specially-conducted end-semester examination for maximum of two theory courses within one month of the declaration of result. In such case, the marks of continuous evaluation and mid-semester examination will remain unchanged. The new end-semester marks will replace the old end-semester marks of the same course. The new grade will replace the old grade obtained in that course.
- Only courses completed after the date of first registration shall count towards the requirement for the award of Ph.D. degree. Furthermore, research scholar must have not studied any of these courses during earlier studies at NIT Delhi.
- The research scholar with the approval of DPGC can complete the requisite course work either at NIT Delhi or any other organization/ industry/ institute (Indian/ Foreign) having MoU with NIT Delhi.

Note: Form PH.D.-III shall be used for this purpose.

8.2 Courses

Research Scholar will have to take a mandatory theory course on Research Methodology (3 credits). Other specialized theory courses as per credits-requirement may be opted on the recommendation of the supervisor(s), RAC, and DPGC as the case may be. A seminar course (1 credit) has to be taken in each of the first and second semesters. Research Scholar may opt for courses being offered at M.Tech level. However, the courses already by studied by him/her at UG or PG level at NIT Delhi may not be chosen for course work. The cumulative course work requirement is as follows:

| Particulars | Credits Requirement | Details |
|---|---------------------|---|
| <i>Ph.D. in Sciences/Humanities for candidates with M.Sc./M.Phil./M.Tech./M.A. degree</i> | 14 | RM (3 credits) + Seminars (2 credits) + Specialized courses (9 credits) |
| <i>Ph.D. in Engineering for candidates with M.Tech. degree</i> | 14 | RM (3 credits) + Seminars (2 credits) + Specialized courses (9 credits) |

(RM: Research Methodology)

Note: 1. Ph.D. student can opt for as many courses for course work even after completing required credits.

2. Online courses like NPTEL may be introduced as the main credit courses to the Ph.D. students where the instructor at NIT Delhi will do only the evaluation but no classes will be taken by him.

8.3 Credit Transfer

The credits earned (after the date of first registration in Ph.D. programme at NIT Delhi) at the collaborative organizations/ industries/ institutes (Indian/ Foreign) having MoU with NIT Delhi may be waived off at NIT Delhi.

8.4 Attendance

The Attendance requirement in each course shall remain same as that of M.Tech. programme of NIT Delhi. However, if the Research Scholar is pursuing his/her requisite course work at any other place of collaborative organization/ industry/ institute (Indian/ Foreign), the corresponding attendance criterion of that organization/ industry/ institute (Indian/Foreign) has to be fulfilled.

9. Leave Rules

9.1 General Leaves:

The Research Scholar is required to carry out his/her research work regularly under the guidance of the supervisor(s), without any interruption during the period he enjoys the assistantship. A full-time Ph.D. student is entitled for *General Leaves* of 30 days in a year @ 15 days/semester including leave on medical grounds (on production of genuine medical certificate from concerned Chief Medical Officer). To avail the *General leaves* (especially non-medical), the research scholar has to preferably apply atleast one day in advance in the prescribed format to the HoD (through supervisor or DPGC convener, as the case may be).

9.2 Exceptional Leaves (for Research Work): 60 days/year may be allowed on following grounds:

- i. For presenting the original research papers in reputed international conferences/symposia. [Timeframe to apply: at least two weeks in advance in the prescribed format to the HOD (through supervisor and DPGC)]
- ii. For attending the reputed International Conferences/Symposia/Workshop/Short-Term courses, meeting with Experts/External Supervisor(s) only after the successful completion of course work. For short-term (1 or 2 days) meeting with external supervisor, the application has to be duly forwarded by the main supervisor with proper justification. The Research Scholar has to submit the meeting report to DPGC after returning. [Timeframe to apply: at least one week in advance in the prescribed format (Supervisor- RAC chairman- DPGC convener - HOD)]
- iii. A research scholar shall be allowed to leave station for visiting other places including the collaborating organizations/Institutes/Industries, getting samples tested from other laboratories, using the laboratory facilities elsewhere if the same is not available at NIT Delhi.

- iv. Such leaves can be availed only after successful completion of their course work and when no teaching assistantship (TA) work is assigned.
- v. To avail these leaves Research Scholar has to attach the detailed plan of research activities/testing etc. to be carried out during the period of leave. A permission letter from the collaborating organizations/Institutes/Industries etc. where Research Scholar intends to visit also needs to be attached.
- vi. In case leave of more than 60 days is extremely necessary for the research work then the final decision will be taken by the Dean (R&C). A recommendation letter from the supervisor(s) and RAC, clearly elaborating the necessity of the leave has to be enclosed along with the application.
- vii. To avail these leaves research scholar has to apply atleast one week in advance in the prescribed format through proper channel (Supervisor- RAC chairman- DPGC convener - HOD – Dean R&C).
- viii. No TA/DA/additional financial assistance will be provided.

9.3 Leave beyond General Leaves (i.e. 30 days): Other than above-mentioned leaves (subject to due approval from competent authority), any duration in which the research scholar remains absent will fall in this category. No stipend for this duration shall be paid.

9.4 Other Rules related to leaves:

- i. Research Scholar is NOT entitled for any sort of vacation (summer/winter/mid-semester).
- ii. The maximum period of absence from work without proper and prior approval from competent authority shall be 15 consecutive days after which a reminder/warning will be issued to the research scholar by the IPGC in consultation with supervisor(s), DPGC and HoD. In case of no response from the research scholar the process of termination of registration shall be initiated. If a research scholar remains absent without prior approval for duration between 5 and 14 day then his/her stipend for the whole month(s) may not be paid. The channel for such cases will be same as for *General Leaves*.
- iii. The intervening holidays will be treated as part of leave with provision of suffixing and prefixing holidays. In no way, the leave rules would affect the attendance requirements for the Research Scholar.
- iv. The Research Scholar may be eligible for Maternity/Paternity Leave with Assistantship as per Govt. of India notification released from time to time.
- v. Any leave not availed of shall not accumulate for next year.

10. Institute Post-Graduate Committee (IPGC)

There is an Institute Post-Graduate committee in the institute to oversee/monitor/decide on all matters related to post-graduate (Ph.D. and M.Tech.) studies. IPGC has the right to take *suo moto* cognizance on any matter related to post-graduate studies.

11. Department Post-Graduate Committee (DPGC)

Each Department has a DPGC consisting of HOD and the faculty members holding Ph.D. as the members (nominated by the HOD). There shall be a DPGC convener nominated by the HOD. The main functions of DPGC are as follows:

- Allotment of supervisor(s) and formation of RAC for each research scholar.
- Overall monitoring of course work of the research scholar.
- Change/reform the RAC at any stage, with proper justification.

- To approve/disapprove the end semester progress report, comprehensive procedure, synopsis and thesis submission or any other appropriate matter forwarded by the RAC of the research scholar.

12. Research Advisory Committee (RAC)

There will be separate RAC for each research scholar. The RAC shall be constituted within one month of the appointment of supervisor. DPGC will form the RAC on recommendations of supervisor(s) and will forward it to IPGC for approval. DPGC convener will initiate the formation of RAC in *form PH.D.-IV*.

12.1. Composition of Research Advisory Committee

The following will be the composition of RAC:

- (i) Member nominated by Director/IPGC (Chairman)
- (ii) Subject expert from outside the institute (Member)
- (iii) Subject expert from the department (Member)
- (iv) Ph.D. Supervisor(s) (Member)
- (v) Co-Supervisor(s) (Member)

12.2. Functions of Research Advisory Committee

RAC will have the following main functions

- (i) Conduct the complete comprehensive procedure of the research scholar and communicate the final recommendations to DPGC.
- (ii) Monitor the progress of research scholar at the end of each semester and forward it to DPGC convener.
- (iii) To conduct the pre-Ph.D. presentation and synopsis submission of research scholar and communicate the final recommendations to DPGC.
- (iv) To consider any other appropriate matter related to the corresponding research scholar.
- (v) The external subject expert must be invited atleast once in a year. However, his/her presence is compulsory during oral comprehensive examination and pre-Ph.D seminar.

13. Comprehensive Procedure

13.1. The comprehensive procedure of the research scholar shall be held after successful completion of course work.

13.4. An oral *State-of-the-art* presentation, along with the submission of a detailed research proposal must be conducted within 18 months from the date of initial registration before RAC. The Presence of External Expert in the comprehensive exam is mandatory.

13.5. If RAC is not satisfied with the Research Proposal/ *State-of-the-art* Presentation, research scholar may be given a maximum of one chance to present the research proposal within six months.

13.6. The research proposal should have the following sections:

- i. Introduction
- ii. State-of-the-Art
- iii. Research Significance
- iv. Scope and Objectives
- v. Methodology
- vi. Time Schedule
- vii. Key References

13.7. The title page should contain the proposed title of the research, name and roll number of the Research Scholar, name(s) of the supervisor(s), department, institute, month and year of submission.

13.8. The total number of pages of the proposal is limited to 15 inclusive of the title pages typed written in Times New Roman, 12 point font size for regular text, and appropriate font size for headings and formatting.

Note: Following forms shall be used for this purpose:

Form- PH.D.-V(A) – Request by research scholar

Form- PH.D.-V(B) – Notification for comprehensive procedure

Form- PH.D.-V(C) – Report of RAC

14. Confirmation of Candidacy/Topic Registration

The candidacy of a Ph.D. student will be confirmed for the Ph.D. degree after successful completion of course work and comprehensive procedure. Candidacy for the Ph.D. degree shall be effective, normally from the date of first registration and shall remain valid for a period of 06 (six) years. The candidacy of a candidate may be deferred by the RAC on account of unsatisfactory progress. A candidate is required to submit the thesis before the expiry of the registration period. In the event of the candidate failing to submit the thesis within the period, the registration shall lapse automatically.

Note: Form- PH.D.-VI shall be used for this purpose.

15. Progress Evaluation

- i. At the end of each semester, there will be progress evaluation by the RAC, which will recommend whether the research scholar's /unsatisfactory.
- ii. She/he shall be allowed to register for the subsequent semester only after the timely submission (as mentioned in the academic calendar) of his/her progress report by the DPGC convener through HoD to the office of IPGC.
- iii. If the research scholar gets one unsatisfactory feedback she/he will be issued a warning to improve the performance in the next semester. However, she/he may be allowed to register for the semester.
- iv. If two consecutive progress reports are not submitted/not satisfactory, the stipend of the Ph.D. student may be stopped. However, the student will be allowed to continue the Ph.D. programme without assistantship/stipend. After getting satisfactory progress by RAC, the stipend of the concerned student may be immediately started from the first day of next calendar month (not from next semester) subject to fulfillment of all other necessary conditions.
- v. In case three consecutive progress reports are not submitted/not satisfactory, the Ph.D. registration shall be terminated.

Note: Form- PH.D.-VII shall be used for this purpose.

16. Pre-Ph.D. Presentation and Synopsis Submission

- i. Submission of synopsis (10 copies) to RAC can be done only after completing the:
 - (a) minimum residential requirement: 36 months from the date of first registration, and,
 - (b) minimum publication requirement: Two publications (published or accepted) resulting from original research (not review articles) in refereed SCI indexed international journals.
- ii. If the RAC is not satisfied with the synopsis, the Research Scholar is required to submit the revised synopsis of his/her research work within next 3 months.
- iii. The Synopsis should preferably contain following sections: Introduction, State-of-the-

Art, Objectives, Methodology, brief Analysis of Results, Conclusions, References and List of publications. For formatting guidelines refer 13.8.

- iv. The title page should contain the title of the research, name and roll number of the Research Scholar, name (s) of the supervisor (s), department, institute, month and year of submission. The total number of pages of the synopsis is limited to 15 inclusive of the title page.
- v. RAC will hold the Pre-Ph.D. seminar to an open audience minimum 15 days after synopsis submission. The presentation will test the candidate's depth of knowledge and progress in his/her research work. If RAC is not satisfied with the quality of the work or the general preparation of the Research Scholar, he/she will have to reappear for the Pre-Ph.D. seminar within a maximum period of six months.
- vi. The final title of the thesis shall be approved by RAC in pre-Ph.D. seminar/synopsis submission.

Note: Form- PH.D.-VIII shall be used for this purpose.

17. Submission of Thesis

17.1. Thesis can be submitted within six months from the date of notification of approval of pre-Ph.D. synopsis by DPGC.

17.2. The thesis shall be written in English in the specific format (Annexure B) and shall contain a critical account of the candidate's research. However, if the research scholar wishes to write thesis in Hindi or other regional language then she/he must provide an English version of the thesis (subject to the check of consistency of thesis content in both versions) for external examination. It should be characterised by discovery of facts or fresh approach towards interpretation of facts and theories or significant contribution to knowledge of development or a combination of these. It should bear evidence of the candidate's capacity for analysis and judgement as well as his ability to carry out independent investigation, design or development. A Ph.D. thesis should be supplemented by published work as mentioned above (i(b) in section 16).

17.3. All Ph.D. theses submitted will have to be checked through Plagiarism software and the corresponding certificate for the same will have to be submitted along with the thesis. Only those theses having similarity index less than or equal to 20%, shall be considered for evaluation and award of degree. No part of the thesis or supplementary published work should have been submitted for the award of any other degree. (Full details in Annexure-C)

Note: Form- PH.D.-IX(A-C) shall be used for this purpose.

18. Evaluation of Thesis

18.1. The supervisor(s) will first contact the potential external examiners with the Ph.D. synopsis in order to take their informal consent preferably via email. After getting the informal consent, the supervisor(s) shall forward a panel of EIGHT external examiners (*form PH.D.-X*) comprising of FOUR foreign examiners and FOUR Indian examiners with brief summary of their research expertise (in a sealed envelope) through HoD to IPGC convener. The examiners must be expert in the research area and preferably, their names may appear in the list of "References" in the Ph.D. thesis submitted by the Research Scholar out of which the Director shall appoint one foreign examiner and one Indian examiner for the evaluation of Ph.D. thesis. Office of Dean (R&C) will obtain the formal consent from the appointed examiners. The Director is empowered to amend the panel of external examiners submitted by the supervisor(s).

18.2. IPGC convener will send two copies of spiral bound thesis to them for detailed evaluation. IPGC convener will convey to the thesis examiners that their evaluation report should include:

- i. Definite statement as to whether the thesis is acceptable or not acceptable for the award of Ph.D. Degree.
- ii. List of questions to be asked or clarifications to be sought from the Research Scholar during the *viva-voce* examination.
- iii. The detailed statement regarding the quality of the work undertaken.
- iv. In case the examiners feel that definite Revision of the thesis is required or, the thesis is not acceptable in the present form and has to be completely re-written due to inappropriate quality of research work, it should be clearly stated.

18.3. After receiving of the examiners' reports, the Photostat copies of the reports shall be forwarded to the concerned research supervisor(s) by IPGC convener. The research supervisor(s) shall send his/her comments to the IPGC convener for further action.

18.4. If one or both examiners ask for complete/partial revision of the thesis, the Research Scholar will be asked to re-submit the thesis after incorporating the necessary changes in light of the comments of the examiner(s) within a period of six months. The re-submitted thesis may be sent to the same examiner(s) again for evaluation, if deemed necessary.

18.5. If one or both examiners recommend the thesis for the award of Ph.D. degree, subject to minor changes, the Research Scholar will be asked to re-submit the thesis after incorporating the changes in light of the comments of the examiner within a period of three months. The re-submitted thesis may be sent to the same examiner(s) only if the Examiner(s) has mentioned about it in his/her report(s).

18.6. In case both the examiners give positive/favourable reports, the thesis will be considered accepted. However, if one of the examiners gives positive/favourable report and the other rejects the thesis, then another copy of thesis shall be sent to a third examiner (same set of examiner) appointed by the Director from the panel already given by the Research Supervisor(s). If the report of the third examiner is found positive/favourable, then the thesis shall be considered accepted. In case, the third examiner rejects the thesis, then the Director will decide (on the basis of the reports of examiners), whether the thesis is to be rejected/or referred again to a new set of examiners for a fresh evaluation.

18.7. In all other cases, not covered by the above regulations, the matter will be referred to the IPGC for consideration.

18.8. A Research Scholar whose thesis has been accepted for the award of Ph.D. degree shall be required to appear in Open House *viva-voce* Examination which will be open to all.

18.9. After satisfactory performance of the Research Scholar in the open house *viva-voce* examination, this committee shall forward its recommendations to the Director through IPGC convener in *form XI* for the award of Ph.D. degree to the Research Scholar. Director will recommend to the Senate for the award of Ph.D. degree to the successful Research Scholar.

18.10. The Research Scholar is required to submit at least five hardbound copies of his/her Ph.D. thesis as per the approved format along-with its soft copy (in a CD/DVD) in PDF format attached with each of the copies. The distribution of these copies is as follows:

- i. Central library
- ii. Departmental library

- iii. Research Scholar personal copy
- iv. Each supervisor
- v. IPGC
- vi. UGC

Note: Form- PH.D.-XII(A-B) shall be used for this purpose.

18.11. In case the Research Scholar fails in the open house *viva-voce* examination, he/she may be permitted to reappear in the open house *viva-voce* examination at a later date (approved by the Director) after the recommendation has been made by the IPGC convener on the basis of report of the panel mentioned in 18.8.

18.12. If the open house *viva-voce* examination committee/panel finds that the performance of the Research Scholar is not satisfactory even on the second occasion, the matter will be referred to the Institute Senate for further course of action.

18.13. Following the successful completion of the evaluation process and announcements of the award of Ph.D., the Institute shall submit a soft copy of the Ph.D. thesis to the UGC within a period of thirty days, for hosting the same in INFLIBNET, accessible to all Institutions/Universities.

18.14. On successful completion of the Open House *viva-voce*, the office of Dean (R&C) will issue a notification in this regard. Thereafter, the research scholar shall be issued a provisional certificate certifying to the effect that the Degree has been awarded in accordance with the provisions of UGC Regulations-2009 for Minimum Standards and Procedure for Award of Ph.D. Degree.

18.15. It is mandatory to electronically submit the copy of Ph.D. thesis in the digital repository 'Shodhganga' set-up at the Information and Library Network (INFLIBNET) centre (An autonomous inter-university centre of UGC).

19. Award of Degree

Thesis should be submitted in library (hard as well as soft copy of the final accepted version). A Ph.D. student who has completed satisfactorily all the prescribed requirements and has cleared all fees and dues payable to the Institute shall be eligible for award of the Ph.D. degree of the Institute. The degree may be formally awarded in the next convocation.

20. Stipend-cum-Teaching Assistantship/ Scholarship and Contingency Grant

- i. All students admitted to the Ph.D. programme are eligible for institute teaching assistantship (TA)/assistantship from other funding agencies.
- ii. In case of unavailability of hostel accommodation in the campus, the Research Scholar may reside outside. Such candidates are entitled for House Rent Allowance (HRA) as per Government of India rules.
- iii. The tenure of an institute assistantship shall be as per MHRD guidelines in this regard.
- iv. The assistantship will be counted from the date of first registration. The initial award shall be for two years and then renewed for subsequent years subject to satisfactory progress to be recommended by the RAC followed by an approval from Dean (R&C).
- v. In the final year, however, the extension may be granted by RAC not more than six months at a time subject to the Research Scholar's satisfactory performance at seminar delivered to RAC embodying the progress of the work during last six months.
- vi. Grant of a six-monthly installment of the tenure is subject to actual requirement of the work and has to be duly certified by the RAC after assessing the progress of the work

presented through a written report and seminar.

- vii. The tenure of the assistantship awarded to a Research Scholar will terminate with effect from the day following the date of thesis submission, provided she/he has not left the Institute earlier and has been working in the Institute till date. However, she/he may be allowed to draw assistantship for a further maximum period of three months to complete any unfinished part of study strictly related to her/his research work on the recommendation of the RAC and approval of Dean (R&C).
- viii. The last month's assistantship shall be released on production of a "No Dues Certificate".
- ix. Notwithstanding anything contained in the forgoing sub-paragraphs, continuation of assistantship from month to month is subject to Research Scholar's good conduct and continuous progress of research work to the satisfaction of the supervisor(s), HoD, and other concerned authorities.
- x. Stipend cum Teaching Assistantship/ Scholarship and Contingency grant to the candidate working under the Sponsored Projects coordinated by the faculty of the institute shall be given as per the terms and conditions of the project. Research scholar has to submit the scholarship form *PH.D.-XVI* every month through proper channel.
- xi. No Ph.D. student will get stipend/assistantship/fellowship for more than two sources, Government of private.

21. Remuneration to Examiner(s)/ Supervisor(s)

The remuneration payable to each examiner(s)/ supervisor(s) shall be decided by the Institute from time to time.

22. Withdrawal from Semester/Courses

A research scholar may be permitted to withdraw by the IP GC from all the courses registered by him or the entire semester, on medical grounds supported by a medical certificate from the Chief Medical Officer. The medical certificate issued by a registered Medical Practitioner will also be acceptable in those cases where the scholar has valid reasons for his absence from the Institute. Withdrawal may also be granted by the IPGC provided he is convinced that the scholar cannot pursue his studies for the reasons beyond his control.

Under no circumstances will a request for withdrawal be entertained after the end semester examinations have begun. Student/Candidate should present the medical certificate in support of his absence on health reasons within two days of his rejoining the Institute, if not produced already. Withdrawal will not be granted retrospectively.

The period of authorised absence in the semester should not be less than eight weeks of contact period for Semester withdrawal to be granted. Regularly in attending the classes and satisfactory performance in the minor(s) if any, held prior to the date of application for withdrawal are the factors which would be taken into account while recommending/granting withdrawal.

Any semester withdrawal will count towards the maximum limit of thesis submission.

23. Discipline

The NIT Delhi is committed to fostering integrity and ethics in the conduct of research. All members of research community including staff, research staff, students, fellows, adjunct faculty, and visiting researchers, are expected to adhere to the highest ethical and professional standards as they pursue research activities.

- i. The Research Scholar is required to observe proper discipline and decorous behavior both inside and outside the campus. She/he should not indulge in any

- activity, which leads to lower the prestige of the institute.
- ii. Any act of indiscipline on the part of Research Scholar and/or research misconduct by any person as mentioned above, which is reported to Dean R&C, will be referred to the Discipline Committee of the Institute from time to time. The Committee will investigate the charges. If the charges are sustainable, it will recommend suitable punishment for the same to the director. The decision of the director will be final in this regard.
 - iii. The willful absence from institute, without prior approval, for fifteen consecutive days will be treated as serious indiscipline and the action may be taken which may amount to termination of registration. (Refer: 9.3 (ii))

24. Right to Amend the Regulation

The Director/Senate shall be empowered to modify or append any regulation(s) from time to time or in case of any dispute.

Annexure – A: Different Forms for Research Scholars

| S. N. | Form no. | Particulars |
|--------------|-----------------|--|
| 1 | PHD-II (A) | <i>Application For the Appointment Of Supervisor(s)</i> |
| 2 | PHD-II (B) | <i>Faculty Members Working/Interested To Supervise</i> |
| 3 | PHD-II (C) | <i>Consent Letter From Faculty</i> |
| 4 | PHD-II (D) | <i>Allotment of Supervisor(s)</i> |
| 5 | PHD-III | <i>Application For Courses To Be Completed</i> |
| 6 | PHD-IV | <i>Formation Of Research Advisory Committee</i> |
| 7 | PHD-V (A) | <i>Request By Student For Comprehensive Procedure</i> |
| 8 | PHD-V (B) | <i>Notification For Comprehensive Procedure</i> |
| 9 | PHD-V (C) | <i>Report On Comprehensive Examination - Written And Oral</i> |
| 10 | PHD-VII | <i>End Semester Progress Report Of Research Scholar</i> |
| 11 | PHD-VIII | <i>Pre PhD Presentation Report</i> |
| 12 | PHD-IX (A) | <i>Candidate's Declaration</i> |
| 13 | PHD-IX (B) | <i>Plagiarism Verification</i> |
| 14 | PHD-IX (C) | <i>Supervisor's Certificate for Exclusion of Self Published Work</i> |
| 15 | PHD-X | <i>List of Examiners</i> |
| 16 | PHD-XI | <i>Report of Viva-Vose Examination for award of Ph.D Degree</i> |
| 17 | PHD-XII | <i>Final submission of Thesis</i> |



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्थान)

(An autonomous Institute under the aegis of Ministry of HRD, Govt. of India)

सेक्टर ए-७, इन्स्टिट्यूशनल एरिया, नरेला, दिल्ली-११००४०, भारत/ Sector A-7, Institutional Area Narela, Delhi-110040, INDIA

दूरभाष/Tele: +9111-33861000-1002, , फैक्स/ Fax: +9111-27787503

वेबसाइट/Website: www.nitdelhi.ac.in

Semester Registration Form

Section-A

1. Name of the Research Scholar: _____ Roll No.: _____

2. Department: _____

3. Date of Initial Registration: _____

4. Semester: Autumn Spring Academic Year: _____

5. Status: Full-Time Part-Time

6. Sponsored/Self Finance/NITD Assistantship/ Assistantship from other sources: _____

7. Proposed Area of Research: _____

Section-B

Particulars of Supervisor (s) (if already appointed)

1. Main Supervisor: _____

2. Co-Supervisor 1: _____

3. Co-Supervisor 2: _____

Section-C

1. Total No. of Credits registering in this semester: _____

2. Courses Proposed to be completed in this semester*:

| Semester | Session | Course No. | Title | Credits | Suggested By** |
|----------|---------|------------|-------|---------|----------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*Write NA if not applicable

**To be suggested by DPGC/Supervisor.

Certified that the courses as mentioned above were not taken by me during earlier studies for my Degree at NIT Delhi.

Date: _____

Signature of Research Scholar _____

Signature of Supervisor(s) (if any) _____

Signature of DPGC Convener _____

Recommend/ Not Recommend

Signature of Head of Department _____

Dean (R&C) _____



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

PHD-II (A)

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

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वेबसाइट/Website: www.nitdelhi.ac.in

Application For The Allotment of Supervisor(S)

Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of First Registration: _____

3. Status: Full-Time Part-Time

4. Sponsored/Self Finance/NITD Assistantship/ Assistantship from other sources: _____

5. Proposed Area of Research: _____

Kindly provide the list of faculty members working/interested to supervise in the above research areas.

Date: _____

Signature of Research Scholar _____

DPGC



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

Ph.D. II B

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

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वेबसाइट/Website: www.nitdelhi.ac.in

Faculty Members Working/Interested to Supervise

1. Name of Research Scholar: _____ Roll No.: _____

2. Proposed Area of Research: _____

D) Vis-a-vis above area of research I suggest following faculty members may be consulted:

| | | |
|----|--|--|
| 1. | Name: _____ Designation: _____ Department: _____ | Interested/ Not Interested Signature: _____ |
| 2. | Name: _____ Designation: _____ Department: _____ | Interested/ Not Interested Signature: _____ |
| 3. | Name: _____ Designation: _____ Department: _____ | Interested/ Not Interested Signature: _____ |
| 4. | Name: _____ Designation: _____ Department: _____ | Interested/ Not Interested Signature: _____ |
| 5. | Name: _____ Designation: _____ Department: _____ | Interested/ Not Interested Signature: _____ |
| 6. | Name: _____ Designation: _____ Department: _____ | Interested/ Not Interested Signature: _____ |

Date: _____

DPGC: _____

Date: _____

Head of Department _____

II) I have interacted with the above faculty members and following is my choice of supervisor(s):

| Sr. No | Main Supervisor | Joint Supervisor(s)* |
|--------|--|--|
| 1. | Name: _____ Designation: _____ Department: _____ | Name: _____ Designation: _____ Department: _____ |
| 2. | | Name: _____ Designation: _____ Department: _____ |
| 3. | | Name: _____ Designation: _____ Department: _____ |

* The justification in case of joint supervisor must be enclosed.

Date: _____

Signature of Research Scholar: _____



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वेबसाइट/Website: www.nitdelhi.ac.in

Consent Letter from Faculty

1. Name of Research Scholar: _____ Roll No.: _____

2. Proposed Area of Research: _____

I give my consent to guide the Ph.D Research work of the above-mentioned research scholar as Main Supervisor/Joint Supervisor as per Ph.D. ordinance of NIT Delhi.

Signature with date: _____

Name: _____

Designation: _____

Department: _____



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

Ph.D. II-D

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

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वेबसाइट/Website: www.nitdelhi.ac.in

Allotment of Supervisor(s)

Department : _____

1. Name of the Research Scholar:.....Roll. No:.....

2. Date of First Registration: 3. Status: Full-Time Part-Time

4. Sponsored/Self Finance/NITD Assistantship / Assistantship from other sources: _____

5. Proposed area of research :

6. Supervisor 1 Name:

Designation:

Department:

Supervisor 2 Name:

Designation:

Department:

Supervisor 3 Name:

Designation:

Department:

DATED:

Signature of Research Scholar

Supervisor 1

Supervisor 2

Supervisor 3

DPGC Convener

Head of the Department

Dean R & C

DIRECTOR



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

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Course-work Registration Form

Section-A

1. Name of the Research Scholar: _____ Roll No.: _____

2. Department: _____

3. Date of Initial Registration: _____

4. Semester: Autumn Spring Academic Year: _____

5. Status: Full-Time Part-Time

6. Sponsored/Self Finance/NITD Assistantship/ Assistantship from other sources: _____

7. Proposed Area of Research: _____

Section-B

Particulars of Supervisor (s) (if already appointed)

1. Main Supervisor: _____

2. Co-Supervisor 1: _____

3. Co-Supervisor 2: _____

Section-C

1. Total No. of Credits to be completed: _____

2. Courses Proposed to be completed:

| Semester | Session | Course No. | Title | Credits | Suggested By |
|----------|---------|------------|-------|---------|--------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

To be suggested by DPGC/Supervisor.

Certified that the courses as mentioned above have not taken by me during earlier studies for my Degree at NIT Delhi.

Date: _____

Signature of Research Scholar _____

Signature of Supervisor (if any) _____

Signature of DPGC Convener _____

Recommend/ Not Recommend

Signature of Head of Department _____

Dean (R&C) _____



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

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वेबसाइट/Website: www.nitdelhi.ac.in

Formation of Research Advisory Committee

Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of First Registration: _____

3. Date of Appointment of Supervisor(s): _____

4. Proposed Area of Research: _____

5. Supervisor(s): _____
: _____

6. Panel of the Experts proposed by the supervisor (s):

A) External Subject Experts (outside the Institute) with complete Contact details:

1. _____

2. _____

3. _____

B) Institute faculty experts, preferably in the concerned area, from the department:

1. _____

2. _____

3. _____

Supervisor 1

Signature:

Name:

Department:

Supervisor 2

Signature:

Name:

Department:

Supervisor 3

Signature:

Name:

Department:

DPGC Convener _____

Head of Department _____

IPGC Convener _____

Director _____



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्था_न)

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वेबसाइट/Website: www.nitdelhi.ac.in

Request By Student For Comprehensive Procedure

Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of First Registration: _____

I have successfully completed the course work as per following details:

| Sr. No | Course No. | Title | Semester/ Session | Credit(s) Earned | Grade Obtained |
|--------|------------|-------|----------------------|------------------|----------------|
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- Self attested photocopies of the grades sheets must be enclosed.
- Research proposal must be enclosed.

It is requested that my comprehensive examination may kindly be arranged.

Date: _____

Signature of Research Scholar: _____

Recommended / Not Recommended

Signature of Supervisor(s): _____

Signature of DPGC (Convener): _____

Signature of Head of Department: _____

Dean (R&C)



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्थान)

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वेबसाइट/Website: www.nitdelhi.ac.in

Notification For Comprehensive Procedure

DEPARTMENT /CENTRE: _____

Oral comprehensive examination & presentation on research plan of Mr./Ms. _____

Research Scholar, Enrollment No. _____ in this Department will be held as

follows:

1. Date _____ 2. Time _____

3. Venue _____

Signature of Supervisor(s):-

Copy to:

1. Convener, IPGC
2. Convener, DPGC
3. All members of RAC



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

Ph.D. V-C

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वेबसाइट/Website: www.nitdelhi.ac.in

Report of Comprehensive Examination

Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of Presentation of Research Proposal: _____

3. Has the candidate completed review work in his/her area of research? Yes/ No.

4. The RAC considered the research proposal broad area _____

(Copy of proposal attached)

5. The research proposal is Approved/Not Approved

Remark: _____

6. The student has successfully completed all requirement for the Thesis Registration as per Ph. D ordinance and the RAC recommends that he/she be accepted as a candidate for Ph.D. work at the Institute with effect from date of presentation of research proposal i.e., _____.

7. If research proposal is not approved, tentative date of next comprehensive examination _____

RAC members Signature:-

| Sr. No | Name | Signature |
|--------|------|-----------|
| | | |
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| | | |
| | | |

Signature of DPGC Convener: _____

Signature of Head of Department: _____

Chairman IPGC: _____

Director



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

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वेबसाइट/Website: www.nitdelhi.ac.in

End Semester Progress Report of Research Scholar

Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of First Registration: _____

3. Status: Full-Time Part-Time

4. Sponsored/Self Finance/NITD Assistantship/ Assistantship from other sources: _____

5. Date of Comprehensive (if applicable) _____

6. Brief report of the work for the period from _____ to _____

7. Details of research publication, if any: _____

(Please attach separate sheet)

8. Proposed work for next semester (Please attach a separate sheet).

Date: _____ Signature of Research Scholar _____

Performance Report and recommendations of RAC

Period: From _____ to _____

I) Performance: Satisfactory/ Not Satisfactory

II) Recommendation for registration in next semester: Yes/ No

III) Recommendation for stipend in next semester: Yes/ No

IV) Remark, if any _____

Signature of RAC Member/DPGC (if RAC is not formed)

| Sr. No | Name | Signature |
|--------|------|-----------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Signature of DPGC Convener: _____

Signature of Head of Department: _____

Chairman IPGC: _____

Director



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Pre - Ph.D Presentation Report of RAC

Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of First Registration: _____

3. Status: Full-Time Part-Time

4. Sponsored/Self Finance/NITD Assistantship/ Assistantship from other sources: _____

5. Name (s) of the Supervisor (s) : 1. _____

2. _____

3. _____

6. Whether the candidate's Research Papers have published in the SCI journals as per regulations: YES / NO
(Proof Attached)

7. If not reasons therefore _____

8. Recommendation of the RAC

(a) Work is satisfactory, and recommended for submissionYES / NO

(i) Title of Thesis (Limited to 80 characters).

In **English** (In Capital Letters) _____

In **Devanagari** _____

(ii) Likely submission date of thesis: _____

(b) Work is not adequate. Another RAC of the candidate may be held after a period of _____ months.

Suggestions Made _____

*Note: All members of RAC should sign on each page of the final synopsis

Member, RAC (External Expert)

Member, RAC (Internal Expert)

Supervisor(s)

Chairman, RAC

DPGC Convener

Head of Department

Chairman IPGC

Director



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

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Candidate's Declaration

I _____ hereby certify that the work which is being presented in the thesis entitled

in partial fulfillment of the requirements for the award of the Degree of Doctor of Philosophy, submitted in the Department of _____, National Institute of Technology Delhi, is an authentic record of my own work carried out during the period from _____ to _____ under the supervision of _____

The matter presented in the thesis has not been submitted by me for the award of any other degree of this or any other Institute.

The Thesis has been subjected to Plagiarism check using _____ software.

Note: Attach the report of plagiarism check.

Signature of the Student

This is to certify that the above statement made by the candidate is correct to the best of my (our) knowledge.

Date:

Signature of the Supervisor (s)



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Plagiarism Verification

Title of the Thesis _____

Total Pages _____ Name of the Scholar _____

Supervisor (s) (1) _____

(2) _____ (3) _____

Department _____

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- Software used _____ Date _____
- Similarity Index _____ Total word count _____

The complete report as generated by the software is submitted for review by the Supervisor.

Assistant/ Deputy Librarian

Checked by:

Name & Signature

The complete report of the above thesis has been reviewed by the undersigned.

- The similarity index is below accepted norms YES/NO _____
- If the similarity index is above accepted norms, reasons:

1 _____

2 _____

3 _____

4 _____

5 _____

The thesis may be considered for the award of degree. (Relevant documents attached).

Signature of Research Scholar

Signature of Supervisor(s)



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Supervisor's Certificate for Exclusion of Self Published Work

Title of the Thesis _____

Name of the Scholar _____

Supervisor (s) (1) _____

(2) _____ (3) _____

Department _____

This is certified that the content of the chapters _____ have been published in

1.

2.

3.

4.

5.

This published work has been included in the thesis and has not been submitted for the award of any degree or diploma to any University/Institute.

Signature of Research Scholar

Date:

Place:

Signature of Supervisor(s)

Date:

Place:



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Department: _____

1. Name of Research Scholar: _____ Roll No.: _____

2. Date of Pre-PhD presentation: _____

Panel of Examiners from India

| | | |
|----|--|--|
| 1. | Name: _____ Designation: _____ Address: _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |
| 2. | Name: _____ Designation: _____ Address: _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |
| 3. | Name: _____ Designation: _____ Address: _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |
| 4. | Name: _____ Designation: _____ Address: _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |

* Attach the list of References

Signature of Supervisor(s)

Note: To be Submitted in a sealed envelope to Dean R&C



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

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Panel of Foreign Examiners

| | | |
|----|---|--|
| 1. | Name: _____ Designation: _____ Address: _____ _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |
| 2. | Name: _____ Designation: _____ Address: _____ _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |
| 3. | Name: _____ Designation: _____ Address: _____ _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |
| 4. | Name: _____ Designation: _____ Address: _____ _____ _____ | Telephone No: _____ Fax. No: _____ E Mail Address: _____ Reference number in thesis _____ |

* Attach the list of References

Signature of Supervisor(s)

Note: To be Submitted in a sealed envelope to Dean R&C



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REPORT OF THE VIVA-VOCE EXAMINATION FOR THE AWARD OF Ph.D. DEGREE

Name of the Scholar _____

Department _____

Title of the Thesis _____

Date of Submission of the thesis _____ Date of Viva-Voce Examination _____

We have conducted the Viva-Voce Examination of the candidate and put to him/her all the questions raised by the thesis examiners in their reports. On the basis of the answers given by the candidates we have to report that:

- (A) We are satisfied with the performance of the candidate and recommend that the candidate be awarded Ph.D. Degree. The report of Viva-Voce Examination is given below:

OR

- (B) The candidate be asked to undergo another Viva-Voce Examination for the reasons given below:

- (i) The candidate is not sufficiently acquainted with the area of this research.
- (ii) The candidate has not shown a capacity for critical examination.
- (iii) The candidate does not appreciate the implications of his/her work.

We certify that the modification/correction suggested by the examiners and accepted by candidate have been incorporated in the thesis.

(Director)

(Head of the Department)

(Supervisor(s))

(External Examiner)

This is certificate that the revisions corrections of errors/omission pointed out during the Viva-Voce Examinations have been incorporated in the thesis by the candidate.

The short abstract of the thesis (600-800) is enclosed herewith.

SUPERVISOR(S)



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

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Candidate's Declaration

I hereby certify that the work which is being presented in the thesis entitled

.....
in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy and submitted in the Department of of the National Institute of Technology Delhi is an authentic record of my own work carried out during a period from to under the supervision of

The matter presented in the thesis has not been submitted by me for the award of any other degree of this or any other Institute.

Note: Attach report of plagiarism check.

Signature of the Candidate

This is to certify that the student has incorporated all the corrections suggested by the examiners in the thesis and the statement made by the candidate is correct to the best of my (our) knowledge.

Signature of Supervisor (s)

Head of the Department



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

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Student Approval Form

| | |
|--------------------|--|
| Name of the Author | |
| Department | |
| Degree | |
| Institute | |
| Guide | |
| Thesis Title | |
| Year of Award | |

Agreement

1. I hereby certify that, if appropriate, I have obtained and attached hereto a written permission/statement from the owner(s) of each third party copyrighted matter to be included in my thesis/dissertation, allowing distribution as specified below.
2. I hereby grant to the Institute and its agents the non-exclusive license to archive and make accessible, under the conditions specified below, my thesis/dissertation, in whole or in part in all forms of media, now or hereafter known. The copyright of thesis/dissertation shall be with institute. I also retain the right to use in future works (such as articles or books) all or part of this thesis, dissertation, or project report.

Conditions:

| | |
|---|-----------|
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| 3. Release the entire work for 'My Institute' only while at the same time releasing the following parts of work (e.g. because other parts relate to publications) for worldwide access. a) Bibliographic details and Synopsis only. b) Bibliographic details, synopsis and the following chapters only. c) Preview/Table of Contents/24 page only. | |
| 4. View Only (No Downloads) (worldwide) | |

Signature of the Scholar

Place : _____

Date : _____

Signature and seal of the Supervisor(s)

Annexure – B

Regulations for preparation of Ph.D. Thesis

1. Thesis should be type-written on both sides of good quarto-size/A-4 size paper in double space with sufficient margins with multiplastic ring binding.
2. Suitable reproduction of Indian-Ink diagrams should be used. Photographs should be suitably mounted on the same quality paper as the thesis.
3. Reference should be given in a style in the text consistent with a standard journal in the field.
4. Three copies of thesis in multiplastic spiral binding in Sky Blue colour cover must be submitted for evaluation. In case of research scholar being supervised by more than one supervisor, appropriate number of additional copies must be submitted.
5. The cover should have the following printed on it in block letters :
 - (a) the title at the top (b) author's name in the middle (c) Name of the Department/Centre and National Institute of Technology, Delhi with logo at the bottom.
6. After the *Viva-voce* Examination, two copies of thesis in hard maroon-colour-cover must be submitted. The cover should have the material indicated in item 5 above. Besides, the following should be printed on the spine of the thesis :
 - (a) the year of publication at the top (b) the author's last name in the middle and (c) Ph.D. at the bottom.
7. The contents of the thesis should have the following format :
 - (i) The hard bound copies of the thesis must contain the following copy right notice in the beginning of the thesis (left side of the inner cover page):—

© National Institute of Technology, Delhi- YYYY
All rights reserved.
 - (ii) Inner cover page (iii) Certificate of the Supervisor(s) (iv) Acknowledgements (v) Abstract (vi) Table of contents (vii) List of figures (viii) Body of the thesis (ix) References (x) Appendices and (xi) Brief Bio-data of the author.
8. The inner cover page should read as follows :

TITLE OF THESIS

by

(NAME OF AUTHOR)

..... Department/Centre

Submitted

in fulfilment of the requirements of the degree of Doctor of Philosophy

to the

National Institute of Technology Delhi

Month & Year

Annexure - C



National Institute of Technology Delhi

(An autonomous Institute under the aegis of MHRD, Govt. of India)

Sector A-7, Institutional Area, Narela, Delhi - 110040 (India)

Department of _____

National Institute of Technology Delhi,

Sector A-7, Institutional Area, Narela,

Delhi - 110040.

Certificate of Originality

This is to certify that the thesis entitled
“ _____

_____” being submitted

by me for the award of degree of Doctor of Philosophy is a record of bonafide research work
carried out by me in the Department of _____

at National Institute of Technology, Delhi, India.

The Thesis has been subjected to Plagiarism check using _____ software.

The matter embodied in this thesis has not been submitted to any other University or Institute
for the award of any degree or diploma.

Date:

Name and Signature of the Candidate



National Institute of Technology Delhi

(An autonomous Institute under the aegis of MHRD, Govt. of India)
Sector A-7, Institutional Area, Narela, Delhi – 110040 (India)

Dated :.....

Plagiarism Verification

• Title of the Thesis.....
..... Total Page.....

• Name of Scholar

• Supervisor (s) (1).....

(2) (3).....

• Department.....

This is to report that the above thesis was scanned for similarity detection. Process and outcome is given below:

• Software used..... Date.....

• Similarity IndexTotal word count.....

The complete report as generated by the software is submitted for review by the Supervisor/HOD.

Assistant/ Deputy Librarian

Checked by:
Name & Signature

The complete report of the above thesis forwarded and recommended to APC has been reviewed by the undersigned. (Check Box)

- The similarity index is below accepted norms.
- The similarity index is above accepted norms, because of the following reasons:
 - 1.....
 - 2.....
 - 3.....
 - 4.....
 - 5.....

The thesis may be considered for the award of degree. (Relevant documents attached).

Signature of Research Scholar

Signature of Supervisor(s)



National Institute of Technology Delhi

(An autonomous Institute under the aegis of MHRD, Govt. of India)
Sector A-7, Institutional Area, Narela, Delhi - 110040 (India)

Supervisor's Certificate for Exclusion of Self-Published work

The content of the chapters _____ have been published in

1.

2.

3.

4.

This published work has been included in the thesis and has not been submitted for the award of any degree or diploma to any University/Institute.

Signature of Student

Signature of Supervisor

Date:

Date:

Place:

Place:

Student Approval Form

| | |
|--------------------|--|
| Name of the Author | |
| Department | |
| Degree | |
| Institute | |
| Guide | |
| Thesis Title | |
| Year of Award | |

Agreement

1. I hereby certify that, if appropriate, I have obtained and attached hereto a written permission/statement from the owner(s) of each third party copyrighted matter to be included in my thesis/dissertation, allowing distribution as specified below.
2. I hereby grant to the Institute and its agents the non-exclusive license to archive and make accessible, under the conditions specified below, my thesis/dissertation, in whole or in part in all forms of media, now or hereafter known. The copyright of thesis/dissertation shall be with institute. I also retain the right to use in future works (such as articles or books) all or part of this thesis, dissertation, or project report.

Conditions:

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| 1. Release the entire work for access worldwide on | SODHGANGA |
| 2. Release the entire work for 'My Institute' only for (a) 1 Year (b) 2 Year (c) 3 Year and after this time release the work for access worldwide. | |
| 3. Release the entire work for 'My Institute' only while at the same time releasing the following parts of work (e.g. because other parts relate to publications) for worldwide access. a) Bibliographic details and Synopsis only. b) Bibliographic details, synopsis and the following chapters only. c) Preview/Table of Contents/24 page only. | |
| 4. View Only (No Downloads) (worldwide) | |

Signature of the Scholar

Place : _____

Date : _____

Signature and seal of the Supervisor(s)

Objectives of Anti-Plagiarism

- Inculcate the habit of respecting the academic integrity and discipline.
- To identify any act of dishonesty in academic and research work constituting to academic.

The proposed workflow

1. The research scholar should submit the soft copy of the thesis for the plagiarism check to the examination section through a CD.
2. Checking shall be done excluding the bibliography, index and references. All exclusions listed is point – 2 of previous page should come here.
3. During the initial plagiarism check the thesis shall not be added to the data repository.
4. The anti-plagiarism report will be generated and mailed back to the student, guide, co-guide and the Registrar (Evaluation).
5. A letter from the office of AL to this effect will be sent to the Supervisor(s) and research scholar.

Permitted Similarity index \leq 20%

6. The thesis can be printed and submitted to the examination section only if a letter to this effect is issued to the candidate and supervisor(s).
7. The candidate shall mandatorily produce the anti-plagiarism report as a par to the thesis.
8. If the similarity index is $>$ 20% the modified thesis has to be resubmitted following the step no.1 of the process with the fee of Rs. 500/-.
9. The student can submit the thesis for the third time with the fee of Rs. 1,000/-.
10. The third chance shall be considered as the final submission failing which the thesis shall not be accepted.

The detailed work flow diagram is as below:

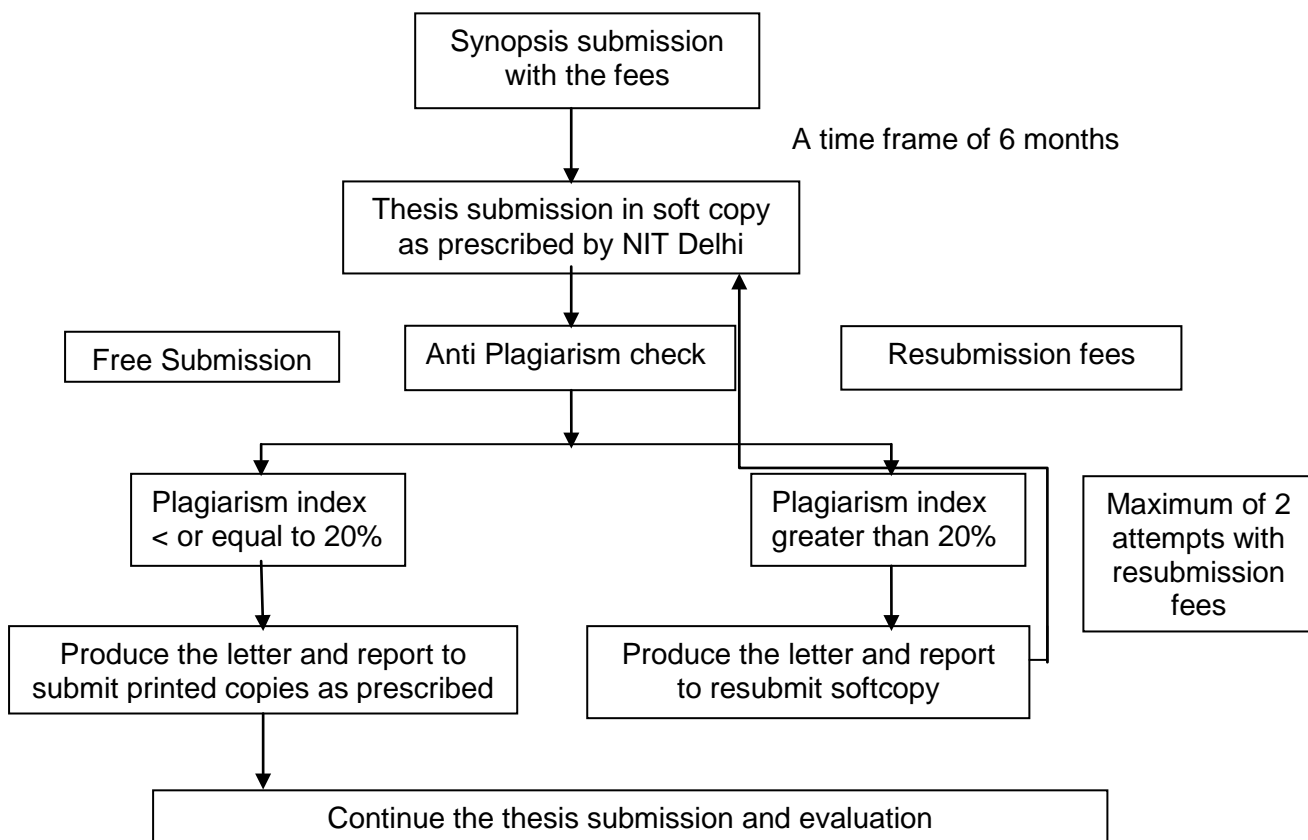


Figure 1: Flow Diagram of the Process

Details of Fees for Plagiarism Check

| | |
|------------------------------------|--------------------------|
| 1st Submission | No Fees |
| Resubmission | Fees of Rs. 500/- |
| 2nd Resubmission | Fees of Rs.1000/- |
| | |

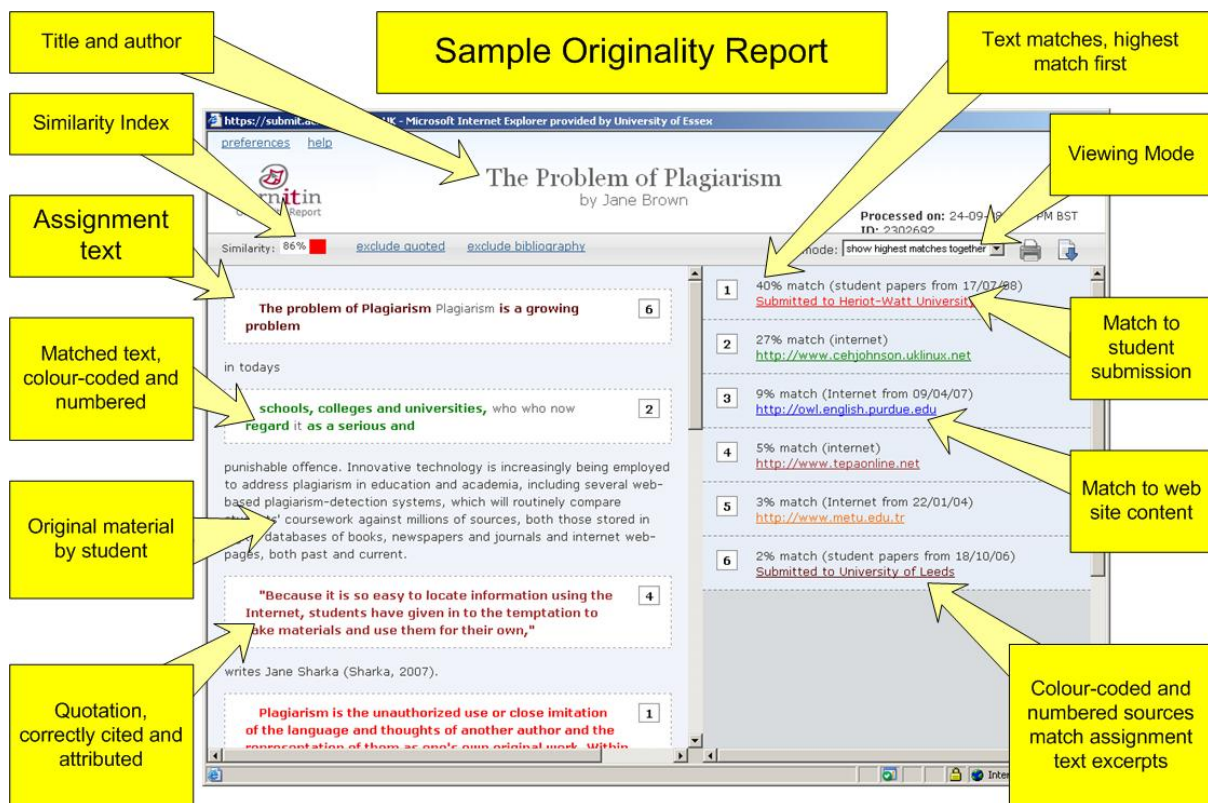


Figure 2. Sample copy of the turn it in report for reference

Entities involved:

1. Assistant Librarian (AL) / Deputy Librarian (DL)
2. Anti-Plagiarism committee (APC) (Dean (R&C), Dean (Academics) and COE)
3. The Research Scholar.
4. The Supervisor(s)/Joint Supervisor(s)

Processes involved in the Assistant Librarian/Deputy Librarian Office after Reception of Softcopy of Thesis/Dissertation

Process involved in the Library for reception of Copy of Thesis/Dissertation:

| S.No. | Activity | Process |
|-------|--|---|
| 1. | Reception of Thesis | <ol style="list-style-type: none"> 1. A soft copy of Thesis has to be submitted by email/ CD with complete details of the Candidate including: <ul style="list-style-type: none"> • Name • Roll No. • Title of Thesis • Department • Name of Supervisor • Email id of Candidate 2. Entire Thesis should be in monolithic form as a pdf file (not separate chapters) 3. Check for the other details of registrations and fees paid 4. Record the transaction in Record Book |
| 2. | Thesis verification | <ol style="list-style-type: none"> 1. Check for the plagiarism index ready file for completeness 2. If incomplete report back to Candidate 3. Generate the report in hard copy as well as soft copy 4. Check similarity index 5. Check for a sample resource match on the internet 6. Store the softcopy for further verification at Dean (R&C) office 7. Print the first page of the report 8. Submit the copy of the report by mail to Assistant Librarian/ Deputy Librarian |
| 3. | Information to the Candidate and Guide | <ol style="list-style-type: none"> 1. Check the report for acceptance 2. If accepted send the information to |

| | | |
|----|---------------------------------------|---|
| | | <p>candidate and the APC office to add thesis to the repository</p> <p>3. If not accepted ask the candidate shall be asked to resubmit within 10 days with fees of Rs. 500/- or Rs. 1000/- based on number of attempts</p> <p>4. Maximum 2 attempts with resubmission fee failing which thesis will not be accepted</p> |
| 4. | Softcopy of the Report | Mail will be sent to the Candidate that contains the report generated by Library with the code as the name of the project |
| 5. | Submission of Hard copy of the report | The candidate need to produce the hard copies of the report as prescribed along with the clearance letter related to plagiarism along with the CD duly signed by candidate with complete details. |