

**Annexure IV**

**Rules and Procedures *for* Ph.D. Programmes**  
*(Applicable from academic session 2017-18 onwards)*

**PEC University of Technology  
Chandigarh**

## Ph.D. RULES

### I. OBJECTIVE OF THE Ph.D. PROGRAMME

The PEC University of Technology has a mission to develop high quality science and engineering specialists having strong base of principles of science and the scientific methods, deep understanding of their chosen areas of specialization, the motivation to learn continually, interact with multi-disciplinary groups and to handle new challenges offered by the front-end technologies.

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

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

### II. ADMISSION TO Ph.D. PROGRAMME

Admission to the Ph.D. programme is made on the basis of interview or written test (GATE/ NET syllabus) or both as determined by Ph.D. Admission Committee of the concerned Department provided the candidate fulfils all the requirements at the Institute level and the selected candidate deposits the requisite fees for the Ph.D. Programme. Admission through online registration will be done once a year in June/July. The applications received will be processed in the various departments for written test/interview.

Internal faculty/ staff members, who are GATE/ NET qualified, will be eligible for admission through interview only, while Non-GATE/ Non-NET candidates will be admitted through interview and written test.

The admission to Ph.D. programme will take place once a year. However, students having National/ State/ Industry/ R&D sponsored scholarship such as UGC NET/ CSIR NET/ DSP inspire/ Vishvesveraya etc. & related scholarships or are sponsored foreign nationals can be given admission throughout the year. The admission to Ph.D. programme at any time during the session is allowed to give opportunity to candidates with high accomplishments who have been awarded government recognized scholarships in Sciences, Engineering, Social Sciences and Management and have the requirement of joining within a stipulated time frame. Such admissions shall be approved by the Chairman Senate on the recommendations of DRC and Dean Academic Affairs.

The Ph.D. admission committee of the department will consist of Head of the department, members of DRC and potential supervisors in various areas.

### III. ADMISSION CATEGORIES

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

- (a) **Full-time Research Student/ Candidate (with/ without scholarship and sponsored)**
- i) Research student with valid GATE/ NET score or admitted to M.E./M.Tech. with GATE and getting assistantship.
  - ii) Research student including a foreign nationals getting financial support from Govt. / Semi Govt. agencies (QIP, CSIR, UGC, DAE, DST, DBT, NBHM, JEST, ICCR, NDF, DRDO, etc.)
  - iii) Research student on study leave: This category refers to persons who are released from governmental or educational institutions on study leave for a period of not less than three years for pursuing Ph.D programme. They will be admitted along with the regular research students through the usual admission procedure.
  - iv) Self-Financed Research student/ Candidate

—**Indian:** This category refers to persons with experience and with good track record to join the doctoral programme. They will be admitted along with the regular research students through the usual admission procedure.

—**Foreign:** Admission of Foreign nationals to Ph.D programme will be made as per policy and direction of the Govt. of India from time to time;

- v) Research student working full time (JRF/ SRF/ RA) in a Sponsored R&D project at PEC provided his Ph.D. topic is related to the project as certified by the SRC six months after joining the project. To be accepted as a Ph.D. student, a research student working in a project will have to undergo the same admission procedure as applicable in general. These students would also be eligible for institute assistantship on lines of students admitted under (a) above.
- vi) Research fellows from reputed and established laboratories of Govt. of India/ State Govt./ accredited labs of QCI, academic and research institutions with which PEC University of Technology has entered into MoU with focus on collaboration in academic and research and CRIKC institutions may be considered for registration in full time Ph.D programme of PEC as is allowed for research students working full time at PEC.
- (b) **Part-time Research Student/ Candidate (sponsored)**
  - i) Research student/ Candidate working as a regular employee in the Institute
  - ii) Research student/Candidate working as a regular employee in research organization like DRDO/ CSIR etc and scientist/faculty working in the CRIKC institutes will be eligible for admission to Ph.D Programme as a Part-Time Scholar provided he/she is in continuous service for the last 2 years in the same organization and can provide a No objection certificate from the employer. The DRC has to ensure the fulfillment of these conditions at the time of interview.
  - iii) Research student / candidate working regularly full-time in an R&D project in the institute can join as a part time student if his Ph.D. topic is not related to the project as certified by the SRC six months after joining the project However, part time research student/candidate may be given full time status when the project tenure is completed. To be accepted as a Ph.D. student, a research student working in a project will have to undergo the same admission procedure as applicable in general.

#### IV. ADMISSION ELIGIBILITY

##### Eligibility for Full-time Research Student/Candidate

An applicant belonging to the above admission categories should possess the following qualifications in appropriate areas to be eligible to apply for admission for the Ph.D. programme of the Institute.

##### a) Engineering Technology streams:

Master's degree in Engineering/ Technology of 2 years duration after graduation in respective discipline or equivalent with a minimum Cumulative Grade Point Average (CGPA) of 6.00 on a 10 point scale or equivalent as determined by the Institute wherever letter grades are awarded; or 60% marks in aggregate (of all the years/semesters) where marks are awarded.

OR

##### b) Science/ Humanities & Social Science, Management Streams:

Master's degree in Science/ Humanities & Social Sciences/ Management in respective discipline or equivalent with minimum Cumulative Grade Point Average (CGPA) of 6.00

on a 10 point scale or equivalent as determined by the Institute where letter grades are awarded; or 60% marks where marks are awarded.

Candidates with valid GATE/ NET score shall be given preference.

- c) The admission eligibility requirements may be relaxed to 5.5 on a 10 point scale or equivalent, or to 55% marks for admission in all categories of scholars for the following categories:
  - i) SC/ST candidates
  - ii) PwD (Persons with disability)

Candidates with valid GATE/ NET score shall be given preference

## **2. Direct Admission of B.E./B.Tech. candidates to Ph.D. programme**

- a) All candidates having B.E./B. Tech degree would be eligible for admission to Ph.D. program
- b) To be eligible for the admission under this category, a candidate is required to have minimum CGPA of atleast:
  - i) 9.0 (on a scale of 10) at the end of the seventh semester (if applying during final year) under Open category.
  - ii) 9.0 (on a scale of 10) at the end of the eighth semester (if applying after the completion of B.E./ B.Tech) under Open category.
  - iii) For SC/ST category students, the minimum CGPA requirement will be 8.5.
- c) Candidates should have a valid GATE/NET score. Selection to program would be made on the basis of GATE/NET score and interview.
- d) Successful candidates in final year of undergraduate programme may be given provisional admission to the Ph.D programme. This admission shall be confirmed provided the student completes his/her undergraduate programme with required graduation CGPA.
- e) Under exceptional circumstances, when a student is unable to complete the requirement of the Ph.D. programme, an exit option with the M.Tech. degree will be available at any time after the end of two years, subject to completion of required course work and M.Tech. dissertation.
- f) B.E./B.Tech students taking direct admission to Ph.D. programme will be required to complete mandatory course work in the first two semesters (similar to that of M.Tech. programme). Successful completion of State-of-Art proposal and additional course requirements as per UGC guidelines after additional one year may entitle the student to assistantship as admissible for Ph.D. students with Master's qualification.

## **3. Eligibility for Part-time Ph.D**

- a) The eligibility criteria shall be the same as that for full time students. Additionally, the part time candidates need to fulfill the following conditions and provide the information along with the application:
  1. The applicants must have been in continuous service with the sponsoring organization for at least two years at the time of submitting the application form for admission and submit 'No Objection Certificate' from the employer stating that (i) He/she is on the regular payroll of the organization, (ii) He/she is permitted to pursue studies on a part-time basis, and (iii) His/her official duties will permit sufficient time for research. Sponsorship letter (on letterhead of the sponsoring organization) should include an undertaking stating that the period of study of the candidates will be treated as 'on duty' with usual salary/allowances, and he/she will be relieved for the period of studies.

2. He/ She will be required to reside at the Institute for a period of not less than one semester i.e. six months duration which is mandatory in the first year of Ph.D Programme. (This condition of minimum residence period will be automatically waived for candidates who are working in PEC or in Organizations/ institutions located within a distance of 50 km from the Institute).

**Note:** 1. *Guidelines on course work for Senior Executives working at the level of CEOs and Directors in industries, Government and research organizations who want to register as Part Time Ph.D. candidates are given in Clause VIII.*

**Note:** 2. *Ph.D. degrees which are pursued either full time or part time will be treated as degrees awarded through Regular Mode provided these are in conformity with the existing Statutes/Byelaws/Ordinances etc. of the degree awarding University. However, the Ph.D. acquired under distance mode is not permitted.*

**GENERAL NOTES:**

1. Reservation of seats for SC/ ST/ PwD candidates shall be provided as per Govt. norms applicable from time to time.
2. Full-time candidates with scholarship coming on study leave must show proof of at least 3 years study leave before being allowed to register after the selection.
3. In case an eligible degree does not bear the awards in percentage, the following Conversion Formula will be used to convert CGPA into percentage of marks for the purpose of admission at the institute Percentage of Marks = CGPA x 10, on 10-Point Scale.
4. The minimum prescribed percentage will be based on the marks obtained in aggregate of all the years/ semesters of the qualifying examination as per the weightage followed by the concerned University.
5. The relevance/ equivalence of Master's degree for admission to a given discipline will be defined/ determined by the DRC of the concerned department and approved by standing committee of Senate.
6. The attendance of full-time Ph.D candidates will be governed by the attendance requirements of the Institute.
7. Part-time Ph.D candidates will be required to meet the supervisor at least once every fortnight throughout the semester. Attendance record should be maintained with the supervisor and office of the Department.
8. All Non-GATE/Non-NET qualified candidates have to qualify a Ph.D entrance exam of the Institute. However, M.E./M.Tech students who were admitted to M.E./M.Tech on basis of GATE score are exempt from the Ph.D entrance exam of the Institute.
9. For admission to Ph.D Programmes in Science/ Humanities/ Management, if the candidate does not have a NET Fellowship (UGC/ CSIR) valid for the current year in relevant area, the candidates has to qualify the Ph.D Entrance Test of the institute.
10. Only the predetermined number of students may be admitted to a Ph.D programme.
11. As per the provisions 1(5) of the UGC Regulations 2009 amended from time to time, Ph.D program will not be conducted through distance education mode.

**V. CONSTITUTION OF DEPARTMENTAL RESEARCH COMMITTEE (DRC) AND STUDENT RESEARCH COMMITTEE (SRC)**

1. The Departmental Research Committee (DRC) will be constituted with the following members:
  - i) Head of the Department, Chairman
  - ii) One member each from various specializations in the department (maximum 4-6 members) on rotation basis for two years

2. The Student Research Committee (SRC) will be constituted with the following members as proposed by the supervisor(s) and approved by the Head of the Department:
  - i) One member from DRC, as Chairman
  - ii) One internal expert in the field from within the department
  - iii) One external expert, preferably in the synergy area, who may be a faculty member from outside the department to which the student belongs or may be from any educational institute/research laboratory within the tricity
  - iv) Supervisor(s), Convener

- Note:**
1. All recommendations of SRC are to be counter-signed by Chairman DRC before further processing.
  2. The Chairman of SRC would continue in this position even if he/ she ceases to be a member of DRC on expiry of term of DRC.

## **VI. REGISTRATION, APPOINTMENT OF SUPERVISOR AND SRC**

1. The final list of selected students along with probable supervisors based on the number of students per faculty member, the available specialization among the faculty supervisors and the research interests of the student as indicated during interview by the student will be decided by the Ph.D admission committee and displayed on the website.
2. Research students admitted to the Ph.D programme are required to join the Institute and report to the Head of the Department on the stipulated date as indicated in the academic calendar. The research students will meet the faculty members of an identified specialization in the department and start the process of selection of supervisor(s).
3. The final research supervisor(s) of a student admitted to a department will be recommended by the DRC as per preference given in writing by the student within one week of admission for approval of the Dean Academic Affairs.
4. The Student Research Committee (SRC) for a research student shall be appointed by HoD, based on the recommendation of the supervisor(s), within a week from the date of initial registration.
5. Every research student/ candidate will be required to carry out subject registration prior to candidacy during stipulated dates and register for the Ph.D degree programme every semester till the submission of the thesis, irrespective of his/ her category and status.

## **VII. SUPERVISOR(S)**

1. Supervisor(s) can be any full-time faculty member(s) of the Institute with a Ph.D degree. In case of joint supervision, one supervisor will be from the parent department where the admission is taken whereas the other supervisor(s) may be taken from within/ outside the Institute, as identified by the supervisor of the parent department in which the candidate has taken admission. Faculty on contract is not allowed to supervise a research student/ candidate. A Faculty member can be allowed to singly guide Ph.D students after two years of completion of his/ her Ph.D degree; however joint supervision is permissible in the initial two years after completion of Ph.D degree. A Professor can be assigned maximum of 08 Ph.D. students, an Associate Professor can be assigned maximum of 06 Ph.D. students and an Assistant Professor can be assigned maximum of 04 Ph.D. students.

In case there are more than one supervisors of a candidate from inside/ outside the institute, the seat will be equally shared among the faculty members.
2. The Dean Academic Affairs, on the recommendations of the SRC, may appoint one or more Supervisor(s), not exceeding a total of three, to supervise a research student/ candidate. These may be from inside or outside the Institute and there should not be more than two supervisors from within the Institute and not more than one supervisor from outside the Institute. Addition/ deletion of Supervisor(s) would be made as per the recommendations of the SRC. In such cases, the minimum association period of new supervisor shall not be less than one year. All such recommendations of SRC will be sent to DAA through Chairman, DRC.
3. Change of Supervisor(s) and Appointment of Caretaker Supervisor for Ph.D students:

**A. In case of long leave of less than 12 months**

A faculty member appointed as a Ph.D Supervisor(s) is expected to be available to a research student/ candidate in the Institute till the thesis is submitted. However, under unavoidable circumstances, in case the supervisor is not available for a period upto six months due to any reason (extendable upto one year in special circumstances based on recommendation of SRC) then a caretaker supervisor will be assigned by the supervisor who will take care of all administrative work of the student, while the student will continue to take academic inputs from the supervisor through email etc. The supervisor can ask the HoD to act as the caretaker supervisor, if he/ she so desires. On return of the supervisor, the caretaker will cease to be part of the SRC of the Ph.D candidate (if he/ she was not a member initially).

**B. In case of long leave of more than 12 months**

- a) Where there are more than one Supervisors of a research student/ candidate, if one of the supervisors proceeds on long leave for more than 12 months, the other(s) may continue to be the Supervisor(s).
- b) Where only one Supervisor exists for a research student/ candidate, another supervisor may be appointed by the SRC in consultation with the student in cases where SRC has not yet found his/ her research work fit for submission of thesis in the chosen area of research work.
- c) If SRC has recommended the research work for submission of thesis before the supervisor proceeds on leave, only a caretaker supervisor will be appointed.
- d) If the thesis has been submitted before the supervisor proceeds on leave, only a caretaker supervisor will be appointed.
- e) Further, if a major revision of the thesis becomes necessary, and the supervisor is on leave, he/ she should be asked to specifically state whether he/ she would effectively help the Research Scholar in carrying out the major revision within a reasonable period. In case the supervisor expresses his/ her inability due to one reason or the other, the caretaker supervisor, if he/she provides the required help in carrying out the major revision, will automatically be treated as a supervisor of that candidate.
- f) If a supervisor proceeds on leave for a period of less than 12 months initially, but later extends his leave beyond 12 months, the above procedure as applicable for leave beyond 12 months, will be followed. The extension granting authority will inform the Dean, Academic Affairs accordingly.
- g) If the supervisor proceeds on leave for more than 24 months during the Ph.D registration of a research student/ candidate, and in the opinion of SRC, he/ she has not contributed significantly to the thesis before proceeding on leave, he/ she will cease to be the supervisor(s).

**C. A Supervisor retiring**

A faculty member who is due to retire within the next two years may be appointed as an additional supervisor and may continue to be the supervisor even after his retirement provided the SRC is convinced of his availability/ continued guidance to the student. In other cases, a faculty member on retirement may continue as a supervisor, if reemployed or appointed Emeritus Fellow; or, If SRC has recommended the research work for submission. Appointment of another supervisor/ caretaker supervisor may be done in such circumstances as in 'A' above.

**D. Supervisor resigning**

A new supervisor will be appointed, if necessary, in such circumstances as in 'A' above.

**E. Death of Supervisor**

A new supervisor will be appointed, if necessary, on the recommendation of SRC.

**F. Supervisor declining to supervise**

In case a Supervisor declines to supervise a research student, another faculty member, qualified to be Supervisor and actively engaged in the same area of research, who consents to supervise the research student, may be appointed as the new Supervisor (as per the choice of the student) on the recommendation of the remaining members of SRC. After that, SRC may be reconstituted by replacing the earlier Supervisor with the new Supervisor and retaining the other internal and external experts.

#### **G. Change/ drop of Supervisor(s) by the research candidate**

If a research student before admission to candidacy wants to drop one of the supervisors, or wants to change the Supervisor(s), a new Supervisor(s) will be appointed by Dean, Academic Affairs, on the recommendation of SRC. In case the research student wishes to change the area of research with new supervisor(s), the entire SRC shall be constituted afresh.

### **VIII. Ph.D. COURSE WORK**

After having been admitted, a Ph.D. candidate shall be required to undertake course work for a minimum period of one semester and maximum of two semesters. For this purpose, **a Ph.D. scholar with M. Tech/ M.Sc. degree has to take at least three/ four courses respectively subject to maximum of 16 total credits.** Further based on the recommendations of SRC, one or more of the courses undertaken during the course work will be a course on research methodology, which may include quantitative methods and computer applications. It may also involve research ethics and reviewing of published research in the relevant field. The other courses will be based on advanced level courses on the recommendations of the SRC. In case, the research student had done research methodology during his/ her Master's degree, he/ she has to complete other courses as recommended by the SRC. Moreover, **one of the course, may be taken in MOOCs mode.** The minimum grade requirement to pass in a Ph.D. Course will be 'B' with an overall minimum CGPA of 7.0 on a 10 point scale.

SRC of the Ph.D. (Part time) candidates who are working as Senior Executives at the level of CEOs and Directors in Industries, Government and Research Organizations, may also allow them to complete their course work through MOOCs, which are run for one full semester with complete assessment (either online or proctored) and assigned a grading or certificate. The grading/certification have to be appropriately adopted. SRC of such candidates may also offer courses through weekend/Module based contract programme to such Ph.D. part time candidates.

B.E./B.Tech students taking direct admission to Ph.D. programme will be required to complete mandatory course work in the first two/three semesters (similar to that of M.Tech. programme) and additional course work requirement of three courses in second year.

### **IX. ELIGIBILITY FOR THE CANDIDACY**

1. The Dean Academic Affairs will approve admission of a research student to candidacy on the recommendation of SRC, which will certify that a research student has fulfilled the following:
  - a) completed the required course work;
  - b) Submitted a research proposal and defended it in the form of presentation of state-of-the-art seminar before the SRC.

Thereafter, the research student will be admitted to candidacy from the date on which SRC recommends the same.

2. If a research student (whether Full Time or Part Time) fails to get admission to candidacy within 24 months of his admission to Ph.D. programme, his/ her registration i.e. admission to the Ph.D. Programme will automatically be cancelled.

### **X. RESEARCH PERFORMANCE MONITORING**



1. The research progress of each research candidate in a semester will be monitored by the SRC, which will assess the performance to be 'satisfactory' or 'unsatisfactory' at the end of each semester. For this purpose, each research candidate will be asked to submit a progress report to the SRC by the stipulated date and shall make a presentation for the same before the SRC at the end of the semester.
2. The supervisor(s) shall forward his/ her (their) recommendation regarding the performance of the research candidate after receiving the progress report and presentation by the student, to the Chairman, DRC in the Department before the beginning of the next semester and the record of the progress report shall be maintained in the department.
3. If the progress of a research candidate in a semester is evaluated as 'satisfactory' by the supervisor, 'S' grade will be awarded to the research candidate for that semester and need not be forwarded to Dean, Academic Affairs for continuation of his/ her academic registration in next semester.
4. If the progress is evaluated as 'unsatisfactory' by the SRC, the evaluation will then be submitted to DRC, with an award of 'X' grade and other appropriate actions for forwarding it to the Dean academic Affairs. For the first award of 'X' grade, a warning will be issued to the Research Candidate by the office of Dean Academic Affairs.
5. If there are 'X' grades awarded in two consecutive semesters to a research candidate, his/ her registration for Ph.D. programme will automatically stand terminated.
6. The academic calendar will include the dates for the submission of the progress reports by the research candidates, such as:
  - Autumn Semester:** 15th December (submission of progress report by the research candidate to the supervisor)
  - Spring Semester:** 15th June (submission of progress report by the research candidate to the supervisor).

## **XI. OPEN STATE-OF-ART SEMINAR AND RESEARCH PROPOSAL**

As one of the essential requirements for the Candidacy in the Ph.D Programme, a candidate must present his research proposal in an open State-of-Art Seminar to the members of SRC. An external expert, from outside the University, as proposed by the SRC on the recommendation of the supervisor, must be invited. In the State-of-Art Seminar, the research student is to present the current state of knowledge through a suitable literature survey about the specific problem on which he/ she wants to pursue research work. The methodology that he/ she intends to use to conduct the research, and the goals he/ she intends to achieve on the completion of the research work should form an integral part of the research proposal. A copy of the research proposal will be given to each member of the SRC and the outside expert one week before the presentation. The faculty and post graduate students of the all departments will invariably be invited to the State-of-Art seminar. The Viva Voce will form an essential component of the State-of-Art seminar.

This presentation can be scheduled after one semester i.e. six months after admission of candidate to Ph.D. Programme at the earliest, but no later than 2 years after his/ her initial registration. In case a candidate fails to complete this requirement within 2 years, his/ her admission to Ph.D. Programme will be cancelled. The supervisor will coordinate the State-of-Art Seminar.

On acceptance of the research proposal and presentation in an open State-of-Art Seminar, SRC will recommend and certify the fulfillment of the requirements for the candidacy of the candidate and send its recommendation through the Chairman, DRC along with copy of the approved proposal to DAA for issue of certificate of candidacy, provided the candidate meets all the other requirements of the institute.

## **XII. CANCELLATION OF REGISTRATION**

1. Registration of a Research student/candidate shall be cancelled in any one of the following eventualities, after due approval of Dean, Academic Affairs.

- a. If he/ she abstains himself for a continuous period of four weeks without prior intimation/sanction of leave.
- b. If he/ she resigns from the Ph.D. Programme and the resignation is duly recommended by the supervisor/ Chairman, DRC/HoD.
- c. If he/ she fails to renew his/ her registration in any semester
- d. If his/ her academic and research progress is not satisfactory for two consecutive semesters.
- e. If all the prescribed courses are not successfully completed within the stipulated time frame of 12 months (for both full time and part time Research students) from initial registration. The minimum grade requirement to pass in a Ph.D. Course will be 'B' with an overall minimum CGPA of 7.0 on a 10 point scale.
- f. Request of a candidate for conversion of his/ her Ph.D. programme from full time to part time will not be allowed before one year and without completion of state-of-the-art seminar and acceptance of research proposal i.e. award of candidacy, and in such a situation, admission of the candidate to Ph.D. programme may be cancelled.
- g. If he/she is found involved in an act of misconduct and/ or indiscipline and termination has been recommended by a competent authority.

### **XIII. RESEARCH STUDENT TAKING UP A JOB/ ASSIGNMENT**

A Full time research student/ candidate cannot take up any job/ assignment during his/ her Ph.D. programme. If he/she takes up a job/ assignment, his/ her status may be converted from Full-time to Part- time student but this change is allowed only after a minimum period of one year and completion of state-of-art seminar and having been granted candidacy for the Ph.D. programme. However, in case of Ph.D. students getting institute scholarship, the conversion is not allowed before 3 years. In case the student does not fulfill the condition of completing 3 years, the entire amount of scholarship is to be refunded to the institute by the student. If the student does not fulfill these requirements and undertakes any job/assignment during Ph.D. programme, his/ her admission to Ph.D. programme will be cancelled.

### **XIV. OPEN PRE-SUBMISSION SEMINAR AND SYNOPSIS**

There will be an open presentation of the work done by the candidate before the thesis is bound and submitted for evaluation provided that the candidate has acceptance of/ published at least one research paper in a peer reviewed refereed journal having an SCI/SCI expanded, on the basis of his/ her Ph.D. research work. The candidate shall produce evidence of the same in the form of acceptance letter/ copy of the research paper. The members of the SRC may recommend modification or extension of the work required before the thesis is completed. The research candidate will deliver a seminar on his research work and the seminar shall be adequately notified by the Chairman, SRC, so as to enable interested faculty members and students of the institute to attend it. If the SRC is satisfied about the quality of the work and considers it fit for submission as a Ph.D thesis, it will send its recommendation to Dean, Academic Affairs through the HoD along with five hard copies and one soft copy of the synopsis, proposed panel of examiners and the bibliography. Minor changes in title and objectives within the framework of the research proposal may be made as approved by the SRC.

A certificate from the supervisor(s) stating that all modifications, if any, recommended by SRC have been incorporated, the research work being reported is the original contribution of the candidate and the work has not been presented anywhere else for the award of any other degree, will be appended to the synopsis. The thesis will be checked for plagiarism using the software available in the library and a certificate attached for the same.

### **XV. MINIMUM AND MAXIMUM TIME FOR THESIS SUBMISSION**

**Ph.D. programme shall be for a minimum duration of three years, including course work and a maximum of six years.**

The candidates of all categories shall submit their thesis within a period of six years from the date of their initial registration for the Ph.D Programme. However, as a special case, this limit may be extended on the recommendation of SRC to a maximum of seven years for Full time research candidate and eight years for Part time research candidate by the Dean, Academic Affairs after which the registration shall stand cancelled automatically.

The women candidates and Persons with Disability (more than 40% disability) may be given relaxation of two years in the maximum duration of Ph.D. programme. In addition, the women candidates may be provided Maternity Leave/Child Care Leave once in the entire duration of Ph.D. for up to 240 days.

## **XVI. SUBMISSION OF THESIS**

- a) The thesis must strictly adhere to the format prescribed by Senate. The candidate should submit four hardbound copies of the thesis for evaluation by the Thesis Evaluation Board. Soft copy of thesis must accompany the hard copies at the time of submission of thesis. The thesis will be checked for plagiarism using the software available in the library and a certificate attached for the same.
- b) The research candidate shall be required to submit fresh synopsis if he/she fails to submit his/her thesis within 4 months of SRC recommendation for submission of thesis. However, in case a candidate fails to submit his/her thesis within the stipulated time and has suitable justification for the same, the Dean academic Affairs may, on recommendations made by the SRC and on individual merits of each case, grant extension in time beyond that for four more months, i.e. the candidate may be allowed to submit his/her thesis within a period not exceeding 8 months from the date of SRC meeting recommending submission.
- c) The candidate has to submit a 'No dues Certificate' in the prescribed form.

### **d) THE SPECIFICATIONS FOR THESIS**

- i) The thesis shall be typed or printed on A4 size paper. No hand written thesis will be accepted. The thesis shall be bound in card sheet paper in black colour. The name of the candidate, the degree and the year shall be printed in gold on the cover and the bound edge. The thesis shall be typed on both sides of the paper with 1½ line spacing; a margin of 3.5 cms on the left and 2.5 cms on all other sides. The font size shall be 12 in Times New Roman. The thesis must contain the following copyright certificate in the beginning of the thesis, on a separate page on the left side:  

© PEC UNIVERSITY OF TECHNOLOGY, 20\_\_\_. ALL RIGHTS RESERVED
- ii) In a thesis, the title page should be given first, then the certificate by the candidate and the supervisor(s) followed by an acknowledgement, abstract of the thesis not exceeding 1500 words and a table of contents. The chapters will include Introduction, Literature review, Materials and Methods, Experimental Details, and Results & Discussions etc.
- iii) The references should be given at the end of the thesis preferably in alphabetic order of the authors' surnames **or** as they appear in the text of the thesis **or** as per standard method adopted in reputed journals in the related area.
- iv) The Tables and Figures should be all in ink or should be printed on a light background. Tabular matter should be clearly arranged.

**NOTE: Soft copy of the thesis in pdf should also be submitted on a CD after final viva-voce examination.**

## **XVII. THESIS READING BOARD AND EVALUATION**

To evaluate the Ph.D. thesis submitted by a Ph.D. candidate, a panel of 6 examiners as far as possible from the authors/experts who have been cited in the thesis of the candidate, will be proposed by the supervisor(s) of the candidate out of which at least 3 will be from IISc/ IITs/ NITs/ universities and organizations within or outside the country.

1. The panel should be duly recommended by the SRC and sent to Dean Academic Affairs through Chairman, DRC for approval/ addition/ deletion and listing in a preferential order by

Chairman Senate. This panel is to be kept confidential. Synopsis of the thesis prepared by the candidate will be sent by the DAA to the top 3 examiners from the approved list for obtaining their willingness to evaluate the thesis. On receiving the acceptance from all the top 3 examiners, the copies of the thesis will be sent to the top 2 examiners from the list for evaluation. In case the acceptance is received from only 2 examiners the thesis will be sent to these examiners. In case of a refusal of two or more than 2 examiners from this list, the next examiners in the approved list mentioned above will be approached for the willingness to evaluate the thesis. Further, in case the list of approved examiners is exhausted, more names could be invited for the purpose by DAA from the supervisor(s) through SRC.

2. The thesis will be sent to the examiners by the office of the Dean Academic Affairs with the request for a detailed assessment report and their recommendations on the prescribed proforma within four weeks of the date of receiving the thesis.
3. The evaluators of the thesis will be required to submit detailed reports and make summary recommendations as to whether the:

(a) Thesis is acceptable as it is

(b) Thesis is acceptable with minor modifications

In case any examiner gives comments to be incorporated in the thesis and also states that the revised thesis need not be sent again to him / her, the revised thesis will not be sent to the examiner. The supervisor(s) shall certify that the comments have been incorporated, before the viva-voce examination.

(c) Thesis is acceptable with major modifications (which must be carried out by the candidate and approved by the same examiner who has sent these recommendations). This may be done within a period of maximum one year of receiving the reports. Only the theses that are rated acceptable by both the examiners (after incorporation of modifications, when required) will be processed further.

i) In case the report from one of the examiners is rated not acceptable even after the modifications are incorporated, the reports of both the examiners will be sent to an independent examiner to be appointed by the Chairman Senate from the list of 6 examiners for final verdict about the acceptability of the thesis.

ii) If the candidate does not agree for revision, he may ask for appointment of the fourth examiner. A new examiner, if appointed, shall be Indian or Foreign depending on whether the thesis was rejected/asked to be revised on the recommendation of an Indian or a Foreign examiner in the first instance. The reports of all the examiners will be sent to the new examiner without revealing the identity of the previous examiners, along with the response of the candidate, if any, to the grounds for such recommendation as given in the detailed comments. The thesis shall be deemed to be acceptable if majority of the examiners including the new examiner recommend acceptance. If the newly appointed examiner recommends revision, the thesis would be suitably revised and resubmitted at least after 3 months and sent for examination to all the examiners except the one in whose place the new examiner was appointed. In case the newly appointed examiner recommends rejection or his/ her recommendation for revision is not accepted by the candidate, the thesis would be rejected. The candidate may then avail the benefit of sub-clause 3b(ii) above.

iii) If the majority of examiners recommend revision of the thesis, the candidate may revise the thesis accordingly and resubmit it within a period of one year for the evaluation by the same set of examiners.

iv) If there is no clear majority opinion and there are recommendations for rejection by some and also, revision of the thesis by some others, the candidate may revise the thesis and resubmit it within a period of one year, for evaluation by the same set of examiners.

d) Thesis is rejected outright

Any doubt arising out of following the procedure laid down in these rules and regulations shall be referred to the Chairman Senate for a decision.

In case of ambiguous recommendations by an examiner, Dean academic Affairs will approach the examiner for a clear recommendation. In case clear recommendation is not forthcoming, the matter may be referred to the Chairman Senate for a decision.

## **XVIII. ORAL DEFENCE BOARD**

On getting acceptance reports from the Thesis Reading Board, candidate shall be asked to defend his thesis, for the award of the Ph.D. degree, before the Oral Defence Board in an open Seminar/Viva Voce. Dean Academic Affairs shall request the Chairman, DRC to arrange for the conduct of this oral thesis defence.

Oral Defence Board will consist of

- (a) Chairman DRC, Chairman of the Board
- (b) One of the examiners of the thesis, Member
- (c) All members of the SRC of the candidate, Members

Chairman Senate will preside over the viva-voce examination.

In case the Chairman, DRC is also the supervisor, the DAA will nominate an additional member to the Board. The Chairman will coordinate the conduct of the Oral Defence on a suitable date decided in consultation with examiner of the Thesis, Supervisor(s) and the candidate. Based on satisfactory performance of the candidate in the Oral Defence, the Oral Defence Board will send its recommendation to Chairman Senate for the approval by the Senate, PEC University of Technology for the award of Ph.D. degree.

Guidelines for conduct of oral defence:

1. (i) The copies of the reports of the thesis examiners shall be sent to the supervisor by DAA with the request to provide these to the candidate so that he/ she may prepare to answer the queries raised in the reports during oral defence. The oral thesis defence shall be adequately notified so as to enable interested faculty members and students to attend it. The oral defence of the thesis of the candidate shall be arranged as early as possible and normally within two months from the date of receipt of communication from the Dean academic Affairs for holding the viva-voce examination.
- (ii) In case of the inability of the supervisor in the capacity of internal examiner to attend the conduct of the oral defence of the thesis due to any reason whatsoever, the Chairman Senate may appoint another Internal Examiner for oral defence from amongst the faculty of the concerned department belonging to the particular field of the thesis, in consultation with Dean, Academic Affairs, and the Head of the Department concerned and he may assist the Chairman, SRC to conduct the oral defence of the thesis. However, in such cases also, the Ph.D. work will be deemed to have been carried out under the guidance of the supervisor only.
2. a) In case of non-availability of the Indian External Examiner in conducting the viva-voce examination, the DAA may appoint another examiner to conduct the oral defence of the thesis from the panel of examiners recommended by SRC. If need be, the SRC may suggest a fresh panel of examiners.
- b) The members of the Oral Defence Board (ODB) shall be provided with the reports of the thesis examiners before the viva-voce examination.
- c) If there is a difference of opinion among the viva-voce examiners in Oral Defence Board (ODB), the recommendations of the ODB will be put up for decision to the Chairman Senate, who may either direct that a fresh viva be held with a new ODB or recommend acceptance or otherwise to the Senate.
- d) On the completion of the oral defence, the Oral Defence Board shall recommend to the Dean, Academic Affairs, one of the following courses of action:
  - (i) That the degree be awarded;

- (ii) That the research candidate be re-examined at a later specified time in a specified manner;
- (iii) That the degree shall not be awarded. The thesis will be rejected on the conclusion that the thesis is not genuinely the work of the research candidate.

In case of (ii) above, the second viva-voce examination may be held normally after a period of 3 months. Any other matter not explicitly provided herein or of an exceptional nature, may be referred to the Chairman Senate for decision.

#### **XIX. AWARD OF Ph.D. DEGREE**

1. The degree of Ph.D. shall be awarded to a candidate by the Senate, provided that:
  - a. The Oral Defence Board so recommends.
  - b. The candidate has submitted one soft and two hard bound copies of the thesis; one for the Library of the Department and the other for the Central Library. These copies of the thesis should incorporate all necessary corrections/ modifications listed by the Thesis examiners/ Oral Defence Board (ODB). This information has to be sent to office of DAA by the HoD and Librarian in-charge.

#### **XX. REPOSITORY WITH UGC**

Following the successful completion of the evaluation process and announcement 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 posting the same in INFLIBNET, accessible to all institutions/universities. Along with the degree, the University/Institution, shall issue a provisional certificate certifying the fact that the degree has been awarded in accordance with the provisions of the UGC Regulations 2009 amended from time to time.

#### **XXI. SUPERVISION OF Ph.D. STUDENTS OF OTHER INSTITUTES/ UNIVERSITIES BY PEC FACULTY**

A faculty member of PEC University of Technology may supervise and guide Ph.D. student(s) of other institutes/ universities subject to following conditions:

- a. The host Institution/ University is recognized by MHRD and UGC/ AICTE.
- b. The request must be forwarded by the competent authority of the host institution.
- c. The concerned faculty should have guided/should be guiding at least one Ph.D. student registered at PEC University of Technology.
- d. The total number of such externally enrolled Ph.D. students under any faculty of PEC University of Technology, should not be more than 2 (two) at any point of time.
- e. Due to extension of this facility to the host institution, the work of the PEC University of Technology should not suffer.
- f. If the concerned faculty of PEC University of Technology, as supervisor of thesis of students of another institute/university is required to visit an organization outside PEC, he/she shall seek prior approval for the specific visit from competent authority, on leave as due (special casual leave). Further, the expenses/ facilities etc. in this regard shall not be borne/ provided by the PEC University of Technology.
- g. If the external candidate wishes to avail the facilities at PEC University of Technology, he/she shall register as casual student for a period not exceeding six months by paying tuition fee being charged from the research students/candidates of PEC University of Technology as per rules and regulations.
- h. The permission has to be taken in the prescribed proforma available at PEC University of Technology and it must be ensured that the information is reported and recorded in the office of Dean Academic Affairs.

## **XXII. FINANCIAL ASSISTANCE (Institutional Assistantship)**

1. a) Those students who are admitted on full-time basis and have GATE/NET score or had been admitted to M.E./M.Tech on the basis of GATE score shall be considered for the award of Institutional Assistantship of the amount as decided by the Government of India from time to time, under specified terms and conditions.
  - b) The students getting Institute Assistantship will provide 8-10 hours of assistance per week in teaching, laboratory development, research etc.
  - c) The total number of assistantships in a department will be as decided by the institute from time to time.
2. The maximum duration for which assistantship can be awarded to any Ph.D. research student/candidate is 4 years or till the thesis is submitted, whichever is earlier. Continuation of the fellowship is contingent on satisfactory academic and research performance and satisfactory performance in the discharge of responsibilities for assistance assigned under the scheme.

It is to be noted that admission to the Ph.D. Programme and award of assistantship are not linked. Admission to any Ph.D. programme does not guarantee the award of fellowship/assistantship. Those who are not awarded assistantship can continue with the Ph.D. programme as self-financing students.

However, based on their performance as evaluated and recommended by SRC, eligible students may be awarded assistantship at a later date, if available, for the remaining part of their four year registration period. Such performance shall be evaluated after first year of admission.

## **XXIII. OTHER RULES**

A research student/candidate will be entitled to avail leave as approved by the Head of the Department following Leave Rules/Attendance Rules formulated and amended from time to time by the Senate. Presently these are as under:

### **1. Leave Rules**

A full-time research student/candidate, during his/her stay at the Institute will be entitled to leave for 30 days per academic year including leave on medical grounds, in addition to Public Holidays. He/she will not be entitled to mid-semester breaks, summer and winter vacation. The leave due can be carried over to the next year and accumulated up to 90 days.

Leave beyond 30 days in an academic year may be granted to a Research student/ candidate in exceptional circumstances, on the recommendation of the supervisor, by the Head of the Department concerned, subject to the following conditions:

- a) The leave beyond 30 days will be without Assistantship/Scholarship/ Fellowship.
- b) An extension of leave up to additional 30 days will be granted only once during the programme of the scholar.
- c) A proper leave account of each research student/ candidate shall be maintained by the Department/ Centre concerned.
- d) Women scholars are entitled for maternity leave/child care leave with full fellowship/assistantship as applicable, for a period not exceeding 240 days, once during the tenure of their award. The application for maternity leave should be supported by medical certificate.
- e) Male Scholars are entitled for 15 days paternity leave once during the tenure of their award. The application for paternity leave should be supported by medical certificate.
- f) Special leave may be granted with the permission of Head of the Department to attend Seminars/ Conferences in India/ abroad for presenting a paper and for carrying out research work in other institutes/ laboratories as approved by the supervisor.
- g) Research students/candidates supported by Govt./ Semi-Govt. agencies may be governed by their own rules, as applicable.

### **2. Attendance**

A full-time research student/ candidate, irrespective of the source of support including self-financing, while pursuing course work, must fulfill the attendance requirement as per institute rules. A research student/candidate after having completed the course work must attend to his/her research work on all the working days and mark attendance except when he/she is away from the campus on duty/sanctioned leave.

In case the attendance of a research student/candidate falls below 75% during a month, he/she will not be paid his assistantship, for that month. Further, if his/her attendance again falls short of 75% in any subsequent months in the same semester his/her studentship/candidacy and support will be terminated.

For the above purpose, if 75% works out to be a number which is not a whole number, the immediate lower whole number will be treated as the required 75% attendance.

**XXIV. INTERPRETATION OF RULES**

For any interpretation of these rules, the matter shall be referred to Chairman, Senate.

**XXV. AMENDMENT OF RULES**

These rules can be amended by the Senate depending upon the academic requirements of the Institute from time to time.

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