

Ph.D – Regulations

1. Educational Qualifications

a. Ph.D. in Engineering:

Master's degree in Engineering / Technology / Business Administration with a first class or a minimum 60% marks (CGPA 6.5 on a 10 – point scale) or equivalent like M.Sc (Engineering) / M.S. by Research.

b. Ph.D. in Sciences / Humanities / Languages:

Master's degree with a minimum 60% in Sciences / Master's degree with a minimum 55% in Humanities / Social Sciences / Languages.

2. Categories and Eligibility

a. Internal full-time Candidates:

A candidate who wishes to work for Ph.D degree on full time (including project staff working in sponsored projects being carried out at the institute) should apply in the prescribed form on or before due dates to be announced normally once every year.

b. Internal part-time candidates:

All the staff members of the institute having the requisite minimum qualifications can work on a part time basis for Ph.D degree. They should apply in the prescribed form on or before the dates to be announced normally once every year.

c. External part-time candidates:

Teachers working in other colleges in a permanent position and candidates sponsored by R & D organisations, National laboratories and Industries having R & D facilities recognized by DSIR, with requisite minimum qualifications can work on part time basis for Ph.D degree but they should apply in the prescribed form on or before the specified dates, to be announced normally once every year.

3. Selection procedure

a. Applications will be invited by open advertisement in all leading news papers / local announcement for all categories of candidates mentioned in section 2.

b. Out of the applications received, the School / Centers will short-list the candidates to be called for written and test / interview to be conducted at the institute on a pre-announced date.

c. Selection will be based on the overall merit index of the candidate which will be arrived at by taking into account the candidate's performance in the previous university examinations at Bachelor's and Master's level and the performance in the written test and / the interview.

The weightages for arriving at the overall merit index will be as follows:

Bachelor's degree	–	20 %
Master's degree	–	20 %
Written test and / Interview	–	60 %

Candidates qualified in CSIR-UGC NET for JRF may be exempted from the written test requirement.

4. Admission

- a. Candidates whose selection is approved based on the written test and interview will be admitted to Ph.D programme after payment of prescribed fees
- b. The candidates admitted to Ph.D programme will apply for registration for Ph.D programme in the prescribed form within one month from the date of admission.

5. Orientation Program

Immediately on admission the students are expected to undergo an orientation programme in the concerned School / Centre. This programme is intended to familiarise the new students with research activities in the School / Centre and establish rapport with the faculty.

6. Research guide

- a. At the end of the orientation programme, each student will be assigned by the concerned Director of the Centre/School to a Research Guide keeping the following in view.
 - (i) The preference and research interests of the student
 - (ii) The research programme of the School / Centre as a whole with an equitable distribution of research students amongst the various research programmes/ faculty members
 - (iii) The interest of the concerned faculty member

The student will choose the topic of his research based on the advice of the Research Guide

- b. There shall not be more than two guides for a research scholar.
- c. In areas where there is not enough expertise at the institute to guide a research scholar on a particular topic, an expert from a neighbouring educational institution / R & D lab / Industry may be appointed as a Research Advisor after due approval by the appropriate authority at the institute. Even in such cases there will be a Research Guide identified from within the institute. The Research Advisor will be appointed on a specific request to the Director of the Academic Research from the Research Guide through the respective Director of the Centre/School giving sufficient justification for the request. A detailed biodata of the proposed Research Advisor should be enclosed along with the request.

7. Guideship

- a. Any faculty member of the institute who satisfies the following requirements is eligible to be appointed as a Research Guide.
 - (i) He / She should have Doctoral degree (Ph.D., D.Sc., or Dr. Ing)
 - (ii) He / She should have research publications to his / her credit, of which at least one paper must be in a refereed journal on research work that is not directly based on his / her Ph.D thesis or included / incorporated therein.
 - (iii) He / She should have a minimum of three years of service left at the institute.
- b. When a faculty member is to be appointed as a guide for first time, he should make an application to be recognized as a guide enclosing his detailed curriculum vitae to be considered by an authorised committee under the chairmanship of the Director, Academic Research.
- c. Faculty who are resigning will be forfeiting their claim as a research guide unless otherwise recommended by Director, Academic Research under extenuating circumstances

8. Continuation of retired faculty members as guides

- a. When a faculty member, who has guided a candidate for 3 years, retires he will be permitted to continue as guide on his written request, and will be invited for the Doctoral Committee meetings without any financial commitment to the Institute. However, for attending the synopsis meeting and the oral examination, the retired faculty member will be paid TA (limited to train travel within India by two-tier AC sleeper) and DA as per the faculty member's eligibility at the time of retirement.

However, there will be a co-guide for taking care of administrative, and to some extent, the research responsibilities, of the scholar.

- b. If a faculty member is to retire within 2 years, and if he is allowed to guide any scholar on his written request, another faculty member, who is not likely to retire within 6 years, will be nominated as one of the Guides of the scholar at the time of registration itself. This is also applicable to faculty members who will be in Vellore and continue to guide the scholar.

The retired faculty member will be invited to attend the Doctoral Committee meetings without any financial commitment to the Institute. However, the retired faculty member who continues to be a guide will be paid TA (limited to train travel within India by two-tier AC sleeper) and DA as per the faculty member's eligibility at the time of retirement to attend the synopsis meeting and the oral examination.

9. Doctoral Committee

- a. A Doctoral Committee will be appointed for each Research Scholar to consider his research proposal, to prescribe the course work required to be undergone by the candidate, to continuously monitor the progress of the research scholar and to advise mid-course corrections wherever needed.
- b. The following is the composition of the Doctoral Committee
 - (i) Director Research - Chairman
 - (ii) Director of the Centre/School in which the Research Scholar is enrolled - Member and Convener
 - (iii) Research Guide or Guides - Member (s)
 - (iv) Research Advisor (in cases where applicable) - Member
 - (v) One faculty member to be nominated by the Director of Academic Research preferably from the panel suggested by the HOD and the Guide (s) - Member
 - (vi) Two faculty members of allied School / Centers or allied institutions nominated by the Director of Academic Research preferably from the panel suggested by the Director and the Guide - Members

In case any member goes on long leave or resigns or retires from the Institute, the Director of Academic Research will nominate another member on the suggestion of the Research Guide and HOD.

- c. For constituting the Doctoral Committee the Guide and Director of the Centre/School will intimate to the academic section, the area of research of the scholar, name(s) of the Guide(s) and a panel of names indicating the area of specialisation of each faculty member / expert suggested on the panel, after two weeks but within one month after the date of joining of the Research Scholar. Apart from the Director of the Centre / School and Guide(s) (and Research Advisor where applicable), the panel should consist of the names of at least three faculty members from the School / Centre in which the Research Scholar is registered and four faculty members of allied School / Centers. In the case of disciplines where it is difficult to find faculty members with suitable expertise in the allied School / Centers, the names of suitable experts with Doctoral qualification and research experience from neighbouring Educational / R & D institutions / Industries may be suggested. In such cases detailed biodata of the members suggested should be forwarded along with the request for constitution of the Doctoral Committee.
- d. The Research Advisor and the External Experts will be paid TA, DA & Honorarium as per institute norms for attending the meetings of the Doctoral Committee.

10. Registration

- a. The Doctoral Committee will normally meet within one month of its being constituted, interview the research scholars, consider his application for registration and the proposed research topic, fix the date of registration and prescribe the courses to be taken by the candidate.
- b. The registration is normally effective from the date of admission to the programme.
- c. However the Doctoral Committee may backdate the registration by a maximum of six months from the date of admission with proper justification. Further backdating limited to a maximum of another six months can be permitted by the Academic Council based on the recommendation on the Doctoral Committee.

11. Course Work

- a. In order to ensure uniformity and quality, it was decided that effective January 2009, courses for the research candidates shall generally be from the regular Masters / Ph D Level courses being offered by the University. For all research students of a particular School / Centre the core courses should be same. Additional courses can be prescribed based on the candidate's background and the proposed research interests. Specialized courses not on offer by the University may be prescribed as electives. For maintaining the uniformity and quality, SRDC shall periodically discuss and design the contents of specialized courses and assign credit values, keeping in view the research pursuits of the faculty. This would help the respective research committees to prescribe specialized courses for research students as and when required, and also help in maintaining quality and uniformity.
- b. To facilitate uniformity in the conduct and evaluation of the courses, the office of Controller of Examinations shall be informed of the research candidates and their prescribed courses after obtaining necessary approval from the Director Academic Research.
- c. Effective from July 2009, all PhD scholars need to compulsorily take a minimum of four courses (offered by the University at Ph.D/Masters level), as advised by the doctoral committee and to sit for the examinations conducted by the COE and complete the same with an average of minimum *C grade* in the four courses. If not, the scholar shall repeat one or more courses till he achieves the prescribed minimum average.
- d. One of the courses should be pertaining to Research Methodology including quantitative methods and computer applications
- e. All Ph.D coursework evaluation should be as follows:
50% Internal Assessment Marks and 50% Term End Examination Marks. Internal assessment is based on the regulations in practice at the University. All procedures

related to coursework assessment & evaluation will be based on the regulations in practice at the university.

- f. In case the doctoral committee/ Director of Academic Research decides that specialized courses are required to be taken by the research candidates, then not more than two courses can be prescribed which may be on a contact or self study basis.
- g. The examinations for the specialized (contact/self study) courses shall be conducted by the Research Guide with information to the offices of Director, Academic Research & COE.
- h. For self study and contact courses the internal assessment may be done at the discretion of the concerned course teacher/guide.
- i. The paper setting for the specialized courses will be the responsibility of the research guide after due consultations with doctoral committee. The examination evaluation of the specialized courses is to be done by a member of the doctoral committee to ensure standards and non-bias.
- j. All grade sheets pertaining to the coursework of all research candidates shall be issued by the Controller of Examinations.
- k. The course work should preferably be completed within 12 months from the date of registration. A grace period of 6 months may be allowed by the Director of Academic Research based on the merits of the cases.
- l. Courses may also be prescribed from those offered by School / Centers other than that in which the Research Scholar is registered. No change in courses prescribed shall be made without the approval of the Doctoral Committee. It shall, however, be open to the Doctoral Committee to prescribe additional courses wherever found necessary.
- m. If a registrant secures less than an average of C grade, he/she will be given another chance for repeating one or more of the courses or for taking an alternative course (to be identified by the Doctoral committee) to obtain the minimum percentage of marks. If the registrant fails even in the second attempt to obtain the minimum percentages, his/her registration will be cancelled. However, giving this chance arises only if the all the course work can be completed within the time limits specified under 11.k.
- n. Normally, only Courses completed after the date of registration will count towards the requirements of course completion.
- o. Notwithstanding the above Regulation, the Doctoral Committee may give credit to courses already undergone by a Research Scholar in this institute or other institutions as part of his / her research programme subject to the condition that he / she has secured a minimum of C grade.

- p. The above requirements are to be fulfilled by both the full-time and part-time students. However, to enable the part-time students to spend minimum time at the institute they may be permitted to write the examinations through self-study and periodical discussions with the concerned faculty member offering the course. This facility will be available for the internal part-time candidate also.

12. Procedure for Monitoring the Progress of Research Scholars

- a. A Research Scholar shall submit within two weeks before the end of each six- month period from date of registration a written report of work done by him / her in the prescribed proforma to the Guide who shall forward it to the Director of the Centre / School with his remarks for consideration by the Doctoral Committee. The report should clearly indicate the progress achieved and cover the following points
 - (i) Thesis proposal status
 - (ii) Course work completion status
 - (iii) Progress made given during period of the report
 - (iv) Publications / reports if any
 - (v) Problems / difficulty if any
 - (vi) Plans for future work
- b. The Doctoral Committee shall meet atleast once in a six months and the Research Scholar is to make a presentation of the progress of his / her work to the committee.

The Doctoral Committee would review the progress and suggest further needs if required.

- c. If progress of the Research Scholar is tardy, the Doctoral Committee shall record the reasons for the tardiness, warn the Research Scholar and suggest corrective measures. If the Doctoral Committee finds that the progress is not satisfactory even after two such warnings, the registration will be cancelled.

13. Comprehensive Examination

- a. After successful completion of the course work a registrant for the Ph.D degree is required to undergo a comprehensive examination within a maximum period of two years (preferably within one and half years) from the date of registration.
- b. The comprehensive examination will be conducted by the Doctoral Committee. The Research Guide frames the syllabus for the comprehensive examination in consultation of the Doctoral Committee. The objective of the comprehensive examination is to test the general capability of the Research Scholar and breadth and depth of his / her knowledge in his / her discipline and areas related to his / her field of research. The syllabus for the comprehensive examination should therefore include not only the courses already

undergone by the Research Scholar but also other related courses in his / her major discipline.

- c. The School / Centre shall intimate in writing to the Research Scholar sufficiently in advance about the date of examination, the scope of the comprehensive examination, the syllabus and other relevant details. At the comprehensive examination the candidate will make a brief presentation of his research work and answer all the questions raised by the members of the examination board related to his research work. However the emphasis of the comprehensive examination would be more on testing the knowledge of the candidate in the topics listed in the syllabus.
- d. No Research Scholar will be permitted to take the comprehensive examination unless
 - (i) tuition and other fees as prescribed are paid
 - (ii) hostel dues up to the month are cleared.
- e. If a Research Scholar fails in the comprehensive examination in the first attempt, he or she may be allowed to appear once again, not earlier than four months and not later than six months from the date of the first examination. If the Research Scholar does not pass in this attempt also, his / her registration may be cancelled administratively by the Director of Academic Research.

14. Candidacy

- a. Every Research Scholar must pass the comprehensive examination and get his/ her candidacy confirmed before submitting the thesis for the research degree. The Research Scholar must make an application for the confirmation of the candidacy in the prescribed format.
- b. The Director of Academic Research, after considering the report of the Doctoral Committee regarding the successful completion of the course work and the comprehensive examination by the candidate, will confirm the candidacy of the Research Scholar for research conferment.

15. Enrolment

- a. All Research Scholars (both internal and external) who are in residence / who are not in residence but whose registration for research degree is still in force, are required to enroll in person each semester on the stipulated date till their submission of thesis.
- b. All Research Scholars (both internal and external), who are keeping their registration alive, should pay the prescribed fees every semester / year till their submission of the thesis.

- c. The registration of a Research Scholar who has not enrolled in person for any one semester is liable to be cancelled by the Doctoral Committee or by the Director of Academic Research.

16. Minimum Period of Registration

- a. The minimum period of study and research required from the date of registration for the Ph.D programme to the date of submission of thesis will be 30 months for full-time Research Scholars and 36 months for part-time Research Scholars.
- b. Special cases, if any would be looked into by the Director Academic Research

17. Maximum Duration of the Programme

- a. All full-time Research Scholars should submit the thesis within five years from the date of registration. The Doctoral Committee may extend the period of submission of thesis by not more than one year on valid reasons.
- b. All part-time Research Scholars should submit their thesis within six years from the date of their registration. The Doctoral Committee may extend the period of submission of thesis by not more than one year on valid reasons.
- c. The registration of a Research Scholar who has not submitted his / her thesis by the end of the extended period as provided in the Regulations will be cancelled administratively by the Director Academic Research.
- d. Revocation of cancellation may be considered only when a draft copy of the thesis is submitted. Revocation would require approvals from appropriate authorities. (Doctoral Committee, Director Academic Research, Vice-Chancellor)

18. Break-in-Studies

- a. Research Scholars can be permitted to break their studies either on medical grounds or for accepting a job with the specific permission from the Director of Academic Research in writing. The break is for a maximum period of one year.
- b. If prior permission is not sought and obtained, it will be considered as a case of discontinuation and action will be taken to cancel the registration of such candidates.
- c. For permitting a break in studies on medical grounds, a certificate from the Chief Medical Officer (CMO) of the institute is essential. For resumption of studies, such a candidate should produce a fitness certificate from the CMO of the institute.
- d. For accepting a job / fellowship abroad: The student should have completed the minimum period of registration, course work, comprehensive examination, all theoretical and experimental parts of the work and should have commenced preparation of the thesis.

The request has to be accompanied by a clear statement of status of research work, a copy of letter of appointment and a letter of assurance from the Research Scholar that he will rejoin the institute at the end of the break period to complete the remaining part of the work and / or to take to Oral Examination, as the case may be, required to qualify for the degree.

- e. Research Scholars who are permitted break in studies should pay the applicable tuition and other fees to maintain their studentship.
- f. To be considered for approval of break in studies a Research Scholar should send the request atleast a month in advance with all the relevant details and documents with specific recommendations of the Research Supervisor(s) and Director of the Centre / School.

19. Submission of Synopsis

- a. When the thesis is nearly ready for submission, the candidate shall submit eight copies of the synopsis of his / her research work through the Guide and Director of the Centre / School to the academic section for consideration of the Doctoral Committee. This synopsis (not exceeding ten pages) is to be submitted by the candidate eight weeks in advance of the probable date of the actual submission of the thesis. This would facilitate finalisation of panel of examiners for evaluation of the thesis, in advance.
- b. The candidate should give at least one colloquium on his thesis work in the School / Centre before submitting the synopsis.

It is mandatory that the candidate publishes at least one paper based on his / her thesis work in a refereed journal of repute before submitting his / her synopsis.

- c. The candidate should present the synopsis before the Doctoral Committee. The Doctoral Committee will, if it approves the work reported in the synopsis, permit the Research Scholar to submit the thesis. It will also recommend a panel of at least eight experts (four from India and four from abroad) in the subject area for evaluation of the thesis.

20. Submission of Thesis

- a. The candidate shall within one month of acceptance of the synopsis submit four copies of the thesis embodying the results of his / her investigation and also five copies of a one-page abstract of the thesis.
- b. The thesis submitted for Ph.D degree should show a definite contribution to advancement of knowledge in the candidate's chosen field of study. It will be evaluated primarily on the quality and quantity of its contribution to new knowledge, interpreted in the widest sense, to include instrumentation, design, development and applied work of an innovative-adoptive nature. The thesis should show evidence of critical evaluation and

judgement and good mastery of the background literature of the subject of research, as well as the candidate's capacity to relate his / her specialised research to the broader framework of the general discipline within which it falls.

21. Panel of Examiners

- a. The Director Academic Research would choose two examiners of repute for evaluation of the thesis from among the panel of examiners recommended by the Doctoral Committee at its synopsis meeting. Out of two examiners, one would be from outside the country and the other would be an expert within the country.
- b. The Director Academic Research would write to the two chosen examiners inviting them to be the examiners of the thesis and enclosing a copy of the synopsis therewith.
- c. On receiving their consent, the Director Academic Research would refer the thesis to the two examiners for evaluation.

22. Thesis Report

- a. Each examiner is expected to send a detailed report of his evaluation of the thesis within two months of the receipt the thesis. The report should highlight the contributions of the thesis, its strengths and weaknesses, modifications / corrections / clarifications if any needed and should include a definite recommendation regarding the acceptability of the thesis for the award of the Ph.D degree.
- b. In case of undue delay in receiving the evaluation report from any examiner, the Director of Academic Research shall appoint another examiner in his place for evaluating the thesis.
- c. If both the thesis examiners declare the thesis as 'Not Commended', the thesis would be rejected and the candidate's registration will be cancelled. However, if one of the two thesis examiners declares the thesis as 'Not Commended' the thesis shall be referred to a third examiner from the panel for his evaluation. If the third examiner also declares the thesis as 'Not Commended', the thesis would be rejected and the candidate's registration would be cancelled.
- d. If reports of two examiners after referral to a third examiner (if necessary) declare the thesis as 'Commended', the Doctoral Committee will consider the reports and recommend for conduct of an oral examination which will be conducted normally not earlier than two weeks from the date of the constitution of the Oral Examination Board.
- e. If an examiner suggests resubmission of the thesis after revision, the candidate will be allowed to resubmit the thesis with necessary revision within the time stipulated by the Doctoral Committee failing which the revised thesis will not be accepted and the candidate's registration will be cancelled.

- f. In all other cases, not covered by the above Regulations the matter will be referred to the Doctoral Committee for consideration.

23. Oral Examination

- a. Candidates are required to take an oral examination on the thesis, at the Institute when arranged. An undertaking to this effect should be submitted along with the thesis.
- b. Candidates who are permitted to leave the Institute without taking the oral examination are required to come for the Oral Examination at the Institute, when arranged, at their own expense. Failure to attend the Oral Examination may lead to cancellation of the registration.
- c. The following is the composition of the Oral Examination Board

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| (i) | Director of Academic Research | - Chairman |
| (ii) | Director of the Centre/School in which the candidate is enrolled | - Member |
| (iii) | The examiner of the thesis from within the country | - Member |

(If the examiner of the thesis from within the country regrets his inability to attend the oral examination, another specialist in the subject would be nominated by the Director of Academic Research from the panel of examiners recommended by the Doctoral Committee to conduct the oral examination)

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| (iv) | Guide / Guides / Research Advisor | - Member / s |
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The Doctoral Committee members the candidate concerned, all the members of the academic council, the staff and students of the concerned School / Centre will be invitees to the Oral Examination. For this purpose, the concerned School / Centre will give a very wide publicity for the oral examination throughout the institute.

- d. At the oral examination, the candidate will first give a seminar on his / her thesis work. The oral examination board then examines the candidate on his / her thesis work. The candidate is expected to answer satisfactorily all the questions raised by the thesis examiners, members of the oral examination board and the general audience present for oral examination. The oral examination board would, then, evaluate the performance of the candidate as 'Satisfactory' or 'Not Satisfactory'.

- e. If the oral examination board declares the performance of the candidate as ‘Not Satisfactory’, the candidate would be asked to reappear for the oral examination to be held not earlier than month and not later than six months from date of the first oral examination.
- f. If the oral examination board on the second occasion also evaluates the performance of the candidate as ‘Not Satisfactory’, the matter would be referred to the Academic Council for a decision.
- g. If the oral examination board evaluates the performance of the candidate at the oral examination as Satisfactory, the guide would send to the academic section through the Chairman of the oral examination board, a report highlighting the proceedings of the oral examination board and signed by all the members of the board, along with a final corrected copy of the thesis to be lodged in the central library of the Institute. The report of the oral examination board should include the following:
 - (i) A brief summary of the thesis highlighting the contributions of the candidate.
 - (ii) Summary of the reports of the thesis examiners including both the positive and negative points.
 - (iii) A note on the oral examination of the candidate.
 - (iv) A certificate regarding the incorporation of the modifications / corrections in the thesis.
 - (v) Evaluation of the performance of the candidate by the board as Satisfactory or Not Satisfactory.
 - (vi) Recommendation to the Academic Council regarding the acceptance of the thesis and award of Ph.D degree to the candidate.

24. Award of Ph.D Degree

Based on the recommendation of the oral examination board, the Institute would award the Ph.D degree to the candidate after due approvals by the Academic Council and the Board of Management.

25. Power to Modify

Notwithstanding all that has been stated above, the Academic Council has the right to modify any of the above Regulations from time to time.