

ANNA UNIVERSITY TIRUCHIRAPPALLI

TIRUCHIRAPPALLI – 620 024



REGULATIONS
for
Doctor of Philosophy
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ANNA UNIVERSITY TIRUCHIRAPPALLI

Tiruchirappalli - 620 024

REGULATIONS FOR DOCTOR OF PHILOSOPHY

1. GENERAL ELIGIBILITY

- 1.1 Master's Degree of Anna University or any other qualification recognized as equivalent thereto in the fields of study notified from time to time by this University. Specific Educational Qualifications are given in Clause 2.
- 1.2 Bachelor's Degree in Engineering / Technology of Anna University or any other qualification recognized as equivalent thereto in the fields of study with a minimum of 15 years of R & D Experience in National research laboratories / Public sector undertakings and with minimum of three publications in referred journals / two patents in the last five years.
- 1.3 First class or minimum of 60 percent marks / CGPA of 6.5 on a 10 point scale in the qualifying examination (55 percent marks or CGPA of 6.0 on a 10 point scale, in the case of SC / ST candidates).
For M.A. (English) Degree holders including SC / ST applicants a minimum of 55 percent marks are necessary.
- 1.4 The Clause 1.3 does not apply if the qualifying degree is M.S. (By Research) of Anna University or recognized as equivalent.

2. EDUCATIONAL QUALIFICATIONS

Programme		Qualification for Admission
(i)	Ph.D. Degree in Engineering / Technology	M.E. / M.Tech. / M.Pharm. or M.S. (By Research) in the relevant branch of Engineering or Technology.
(ii)	Ph.D. Degree in Science and Humanities.	M.Sc. / M.A./ M.S.(By Research) in the relevant branch of Science and Humanities /M.C.A.
(iii)	Ph.D. Degree in Management Sciences	M.B.A / Post Graduate Diploma in Business Management or Administration awarded by Indian Institute of Managements (IIMs) / M.S.(By Research) in Management Sciences.
(iv)	Ph.D. Degree in Architecture and Planning	M.Arch. / M.Plan. / M.S. (By Research) in Architecture and Planning.

3. Ph.D. PROGRAMME

Candidates who satisfy the eligibility criteria as in Clause 1 & 2 are eligible to apply for Ph.D. Programme.

3.1 Full-Time Ph.D. Programme

- 3.1.1 Candidates under full-time shall do research work in Anna University Tiruchrappalli and shall be available during the working hours for curricular, co-curricular and related activities.
- 3.1.2 Candidates in employment who want to pursue full-time studies should be sponsored by their employer and should avail leave for the research period and should get formally relieved from their duty to join the research programme.
- 3.1.3 Candidates who are sponsored by the AICTE under Quality Improvement Programme for Teachers of Engineering Colleges and who satisfy the eligibility conditions shall be eligible for full-time only, in the disciplines as notified in AICTE guidelines.
- 3.1.4 Candidates who are selected in Fellowship programme of National or any recognized bodies and who satisfy the eligibility conditions as per the regulations are eligible for full-time studies in the respective disciplines.
- 3.1.5 Foreign nationals sponsored by the Government of India on any exchange programme and who satisfy the eligibility conditions as per the regulations are eligible for full – time study

3.2 Part-Time Ph.D. Programme

The following categories of candidates are eligible to apply for part-time programme

- 3.2.1 Full - Time teachers of the constituent colleges / colleges affiliated to Anna University / Government / Government Aided Polytechnic colleges.
- 3.2.2 Candidates working in the projects undertaken from State / Central / Quasi Government and totally funded through the projects in the constituent colleges / affiliated colleges of this University. The Principal Investigator of such projects shall be a recognized supervisor of this University and the candidate shall register for research programme under the supervisor only. The candidate should be employed in the project for the minimum period of the research programme (clause 10). Part employments in different spells or in different projects are not permitted. The department where the project is undertaken should be a recognized research centre of this University.
- 3.2.3 Candidates working in Industrial Units or R & D Departments / Labs / Units of Government / Quasi Government or any other research laboratories which are recognized by University to have collaborative research with the University and sponsored by the respective employer / Organization.

Note (i) : The categories of eligible candidates mentioned in 3.2.1 and 3.2.2 working in the Constituent / Government Engineering Colleges are classified as Part-Time (Internal). The nomenclature shall continue as per norms for the above scholars till they are on research.

Note (ii) : The teachers of affiliated colleges / Government and Government aided polytechnic colleges in clause 3.2.1 and candidates from Industrial Units and R&D Labs as mentioned in Clause 3.2.3 are classified as Part-Time (External). The nomenclature shall continue as per norms for the above scholars till they are on research.

4. PLACE OF RESEARCH

The place or places of research in respect of Full-Time and Part-Time programme are as under

4.1 Full-Time

The Full-Time programme shall be undertaken in the Constituent Colleges / Government / Government Aided Colleges and approved research departments of the affiliated colleges of this University.

4.2 Part-Time

4.2.1 The place of research for teachers of constituent / affiliated colleges (as specified in clause 3.2.1) shall be the college where the supervisor is working.

4.2.2 The place of research for the project candidates mentioned in clause 3.2.2 shall be the college where the project is undertaken.

4.2.3 The place of research in the case of candidates working in Industrial Units etc., mentioned in clause 3.2.3 shall be the college where the supervisor is working.

4.2.4 The Place of research for other categories of candidates (not mentioned in clause 4.2.1 to clause 4.2.3) shall be the respective department of the University.

5. MODE OF SELECTION

5.1 The candidates desirous of registering for the Ph.D. degree programme should apply in the prescribed application form through proper channel wherever applicable before the due date as indicated in the notification issued from time to time. Normally, the University will issue notification for Ph.D. admission twice in a year.

5.2 The application of the candidates shall be processed by committees constituted by the Director (Research) for the purpose of selection. The composition of such committees shall be decided taking into account the number and nature of the applications received.

5.3 Such committees shall screen the applications as per the eligibility norms and be responsible for the conduct of test and interview for the eligible candidates. Based

on the performance in the test and interview, the successful candidates shall be short listed by the above committees.

- 5.4 For such short listed candidates, the committees shall nominate the supervisors, taking into consideration the area of research of the candidates and the field of specialization of the supervisors eligible to guide and forward the same to the Director (Research) for placing before the Research Board.

6. ADMISSION

- 6.1 The Research Board constituted by the Syndicate shall determine the suitability of such candidates and recommend for admission to the Doctoral programme in the appropriate fields, after giving due consideration to the inter-disciplinary fields of research if any and the faculty in which the candidate shall be registered.
- 6.2 Such candidates shall be provisionally registered for the Ph.D. programme with the concurrence of the Vice-Chancellor and with due intimation to the concerned Supervisor, the candidate and the sponsoring institution, if any.
- 6.3 The date of provisional registration shall normally be the 1st of July or the 1st of January of the year in which the candidate is admitted.

7. SUPERVISOR RECOGNITION

- 7.1 The applicant for supervisor recognition shall be working full-time in the Constituent Colleges / Government and Government Aided Engineering Colleges / Affiliated Colleges of Anna University or employed full-time in the places as indicated under clause 3.2.3.
- 7.2 The applicant shall specify the interested area of research in the relevant area of research in which he / she proposes to guide the candidate.
- 7.3 The applicant shall have a minimum of one publication to his / her credit in referred International Journal.
- 7.4 Recognition as supervisor for guiding research work shall be accorded by the Vice-Chancellor on the recommendations of the Research Board.
- 7.5 Joint-Supervisor shall be recommended by the Research Board wherever absolutely necessary, for research areas that require more than one expert.
- 7.6 A Supervisor shall entertain fresh registration of candidates even after his / her retirement from service.

8. CHANGE OF SUPERVISOR

- 8.1 When a supervisor of a research scholar happens to be away from the University, for more than 6 months and up to one year, he / she shall continue to guide the research scholar, but a supervisor-in-charge shall be nominated by the Director

(Research) in consultation with the Head of the Department (HOD). The supervisor-in-charge shall function till the supervisor returns.

- 8.2 When a supervisor of a research scholar happens to be away from the University for more than one year, an alternate supervisor shall be nominated by the Director (Research) in consultation with the concerned HOD of the Research Scholar, if the supervisor has left before the completion of one year research period of the scholar.
- 8.3 When a supervisor happens to be away from the University for more than one year after completion of one year research period of the research scholar, the nomination of alternate supervisor / supervisor-in-charge shall be decided by the Director (Research) in consultation with the HOD, taking into account the status of the research scholar.
- 8.4 When a supervisor retires from service on superannuation or leaves service, he / she shall make arrangements for alternative supervisor for his / her research scholar. However, the supervisor who retired from the service shall continue to guide a research scholar, on his / her written request. However, a Joint Supervisor shall be nominated by the Director (Research) in consultation with the HOD to take care of the administrative and to some extent, the research responsibilities of the scholar.

9. NUMBER OF CANDIDATES

A supervisor shall not normally guide more than ten research scholars for Ph.D. at any time. However a supervisor shall guide five more research scholars as a Joint-Supervisor. Additional candidates, if any under extraordinary circumstances, shall be decided based on the merit of the cases.

10. DURATION OF THE PROGRAMME

- 10.1 The duration of the programme and the time for submission of thesis are counted from the date of provisional registration vide clause 6.3.
- 10.2 The minimum duration of the programme in Engineering, Technology, Architecture & Planning, Agriculture, including the degrees from Pharmaceutical Sciences, Fisheries and Allied Courses for Full-time / Part-time shall be two / three years respectively.
- 10.3 The minimum duration of the programme in Science & Humanities for Full- time / Part-time shall be three / four years respectively.
- 10.4 The minimum duration of the Programme in Management Sciences for Full-time / Part-time shall be as in clauses 10.2 / 10.3 for scholars with Engineering / Science background respectively.
- 10.5 The maximum duration for all the above programme shall be six years.

11. EXTENSION OF MAXIMUM DURATION

- 11.1 In exceptional circumstances, if the Doctoral Committee recommends and the Research Board deems it fit, a maximum grace period of 2 years beyond the normal maximum period of 6 years may be granted, by the Vice-Chancellor, six months at a time, to enable the research scholar to submit the thesis.
- 11.2 If the research scholar fails to submit the thesis within the extended period of two years, the registration shall be cancelled and the name shall be removed from the rolls.
- 11.3 Break of study to research scholars shall be granted up to a maximum period of two years in spells of 6 months at a time. Such period shall be accounted for the counting of duration of the programme (clause 10). The research scholar should remit the programme fee during the break of period.
- 11.4 The Director (Research) shall permit on deemed fit reasons for break of study of the research scholar and in extraordinary circumstances like medical grounds and other compelling reasons which warrants his / her absence to the programme.

12. DOCTORAL COMMITTEE

There shall be a doctoral committee for each scholar to monitor the progress of research.

- 12.1 The Supervisor shall furnish for every candidate a panel of names of 6 experts well versed in academia, preferably with doctoral qualifications in the field of proposed research, from the faculty of the University and other organizations from whom two experts will be recommended by the Chairman / Chairperson of the Faculty, as members (one from the University and one from the outside experts).
- 12.2 The Supervisor of the research scholar shall function as the convener of the Committee.
- 12.3 The Joint-Supervisor, if any, shall also be a member.
- 12.4 The Head of the Institution of the research scholar from the affiliated colleges, other than constituent, Government & Government aided and recognized departments for research in affiliated colleges shall be a Research Coordinator and member of the committee.
- 12.5 The Head of the Institution of the research scholar, where he / she is doing research, shall be an ex-officio member.

13. PROGRAMME STRUCTURE

13.1 Course Work

- 13.1.1 The Doctoral Committee of a research scholar shall meet within 3 weeks from the date of communication of provisional registration of the candidate to prescribe the course work for the research scholar.

- 13.1.2 A minimum of four courses relevant to the area of research that are offered under any approved PG programme of Anna University (Tiruchirappalli, Coimbatore, Tirunelveli, and Chennai) shall be recommended by the Doctoral Committee.
- 13.1.3 If any course specific to the area of research has to be newly designed, then such course shall be formulated as a special elective to be covered in not less than 45 contact hours of instruction and the course syllabus shall be designed by the Doctoral Committee and got approved by the Chairman of the Faculty. These courses shall be of P.G. level and shall be limited to two only.
- Note (i) :** The research scholars shall enroll for the courses offered through Modular Based Credit Banking Scheme (MBCBS) for the P.G. programme offered by the University (at its nodal centres)
- Note (ii) :** The research scholars shall enroll for the regular courses offered in the University campus or Research Initiative Programme (RIP) conducted by the University.
- 13.1.4 The prescribed course work shall normally be completed within one year from the date of provisional registration in the case of full-time research scholars and two years in the case of part-time research scholars.
- 13.1.5 All the above course works of the scholar are to be undertaken as per the academic norms and shall be evaluated by the norms of this University.
- 13.1.6 No change in the course works prescribed shall be made without the approval of the Doctoral Committee.
- 13.1.7 Only courses taken after the date of provisional registration shall count towards this requirement. Any courses already passed by the candidate prior to the registration shall not be counted for this purpose.

13.2 Comprehensive Examination

- 13.2.1 On the successful completion of the prescribed course work, as evidenced by the Grade/ Mark sheet of the research scholar issued by the Controller of Examinations, the Doctoral Committee shall conduct for every research scholar a qualifying / comprehensive / written and oral examination to test the background knowledge of the research scholar in the broad area of specialization and the course work undergone. Based on the result of this examination the Doctoral Committee shall report the Director (Research), the fitness of the research scholar to confirm the provisional registration and to proceed further with his / her Ph.D. work within two months of the date of the examination held.

The experts committee for the conduct of oral comprehension and confirmation of Ph.D. / M.S. (By Research) registration shall comprise of six members, three from Doctoral Committee and three members nominated by the Vice-Chancellor.

- 13.2.2 If, based on the results of the comprehension examination, a research scholar is not approved by the Doctoral Committee and then a grace period of upto a maximum of six months shall be given at the end of which, the research scholar

shall be re-examined. If found fit, the research scholar shall be permitted to proceed with doctoral work. Otherwise, the research scholar's provisional registration shall be cancelled.

14. RESEARCH OUTSIDE THE UNIVERSITY

- 14.1 During the course of the Programme, for reasons approved by the Doctoral Committee a research scholar shall be permitted by the Director (Research) to spend up to one year in an Institution or on a project approved for the purpose, outside the University for carrying out research in areas related to the subject of investigation.
- 14.2 Research scholar shall be permitted to do research outside University on related fellowship programme.
- 14.3 Research Scholar who carried out research outside this University shall submit the synopsis only after a minimum period of three months on his / her return.

15. MONITORING THE PROGRESS OF CANDIDATES

- 15.1 Every six months commencing from the date of provisional registration, the candidate shall submit progress report in the prescribed format to the Supervisor who shall forward it through HOD to the Director (Research) for information and documentation.
- 15.2 The Supervisor shall arrange to make a presentation by the research scholar on his / her work twice a year before the faculty of the department and once in a year to the Doctoral Committee which is open to all faculty members and research scholars.

16. CANCELLATION OF REGISTRATION

- 16.1 The registration of a research scholar who has exceeded the maximum period stipulated for the Ph.D. programme as in Clause 11.1 shall stand cancelled automatically.
- 16.2 The registration is liable for cancellation administratively by the Director (Research) if
 - i. The research scholar has not paid the semester fees within the stipulated time with the necessary fine.
 - ii. The progress report are not submitted consecutively twice or the reports are not satisfactory.
 - iii. The performance is not satisfactory to the doctoral committee and accordingly recommended for cancellation.
 - iv. The research scholar wishes to withdraw the course and wishes to cancel his / her registration.

16.3 In all the above cancellation cases, the fees paid by the research scholar shall not be refunded.

17. SYNOPSIS OF THESIS

17.1 The research scholar shall be permitted to submit the synopsis only after obtaining the confirmation of registration.

17.2 The synopsis shall be accepted only when the research scholar has atleast one paper either published or accepted for publication in a referred National / International journal.

17.3 The research scholar shall submit to the Doctoral Committee through the Supervisor, six copies of the synopsis of the Ph.D. work carried out.

17.4 If the Doctoral Committee approves the research work reported in the synopsis, it shall forward the six copies of the approved synopsis to the Director (Research) along with a panel of at least six examiners three from India and three from abroad.

18. SUBMISSION OF THESIS

18.1 The thesis shall report, in an organized and scholarly fashion, an account of original research work of the research scholar leading to the discovery of new facts or techniques or correlation of facts already known (analytical, experimental, hardware oriented etc.) and demonstrating a quality as to make a definite contribution to the advancement of knowledge and the research scholar's ability to undertake sustained research and present the findings in an appropriate manner with actual accomplishments of the work plainly stated and honestly appraised.

18.2 Five copies of thesis shall be prepared in accordance with the format and specifications prescribed. These shall be submitted within three months from the approval of the Synopsis by the Doctoral Committee along with three copies of the abstract of the thesis in about 400 words. Under no circumstances, the thesis submission can be delayed except under extra ordinary special circumstances, where an extension of three months may be permissible with the recommendation of the Doctoral Committee.

18.3 The thesis shall include a certificate of the supervisor from the University as prescribed, to the effect that the thesis is a record of the bonafide research work carried out by the research scholar under his / her supervision and guidance and that the work reported in the thesis has not been submitted elsewhere for a degree or diploma.

18.4 The thesis shall be scrutinized by a Scrutiny Committee constituted by the Vice-Chancellor to assess the overall layout, contents and the quality of presentation of the thesis. The deviation, if any, shall be rectified by the research scholar in consultation with the supervisor. Further, the Committee shall recommend

- to the Vice-Chancellor to refer back the thesis to the doctoral committee for suitable revision, if the same is not prepared in conformity with Clause 18.1
- 18.5 Fees shall be paid by the research scholar for every semester till the submission of the thesis.

19. THESIS EVALUATION

- 19.1 The thesis shall be referred to two examiners (one from India and another from abroad) nominated by the Vice-Chancellor from the panel of examiners recommended by the Doctoral Committee. The Vice-Chancellor, if he deems it necessary, may also nominate the examiners from outside the panel.
- 19.2 The examiners are expected to send their reports in the prescribed form within two months from the date of receipt of the thesis.
- 19.3 The Director (Research) shall take steps when necessary to receive the reports from the examiners as quickly as possible.
- 19.4 The examiner shall include in the report an overall assessment placing the thesis in one of the following categories.**
- 19.4.1 Recommended for the award of the degree of Doctor of Philosophy:
Commended / Highly Commended
- 19.4.2 Revision required
- 19.4.3 Rejected
- 19.4.4 The examiner shall enclose a report of 200 to 300 words, indicating the standard attained in the case of 19.4.1, the nature of revision in the case of 19.4.2 and the reasons in the case of 19.4.3.
- 19.5 If both the examiners recommend the award of the degree, thesis shall be provisionally accepted. Any minor revision, modification etc., suggested by the examiners shall be carried out by the candidate before the oral examination is arranged.
- 19.5.1 If both the examiners recommend rejection, the thesis shall be rejected and the registration of the research scholar stands cancelled.
- 19.5.2 If one examiner recommends the award of the degree while the other recommends rejection, then the thesis shall be referred to a third examiner to be nominated by the Vice-Chancellor as in clause (19.1). If two of the three examiners recommend the award, the thesis shall be provisionally accepted. If two of the examiners recommend rejection, the thesis shall be rejected and the registration of the research scholar stands cancelled.
- 19.5.3 If any examiner recommends revision of the thesis, the candidate shall be permitted

only once to revise and resubmit the thesis within 6 months and the revised thesis shall be referred to the same examiner only in the situation such as: (i) When the examiner recommends new experiments and major modification involving new methodology and also (ii) The examiner insists the University to send the thesis back to the same examiner after revision for offering his final recommendation on the thesis which should only be either recommended for the award or rejected. In case, the examiner does not insist on sending the thesis back to him, the thesis shall be referred to the doctoral committee to ascertain the corrections carried out in the thesis as suggested by the examiners. The Doctoral committee shall study the report of the examiners and accordingly recommend a panel for constitution of an oral examination board, within a period of three months from the receipt of the reports by the supervisor.

19.5.4 Individual cases not covered by the above clauses shall be referred to the Vice - Chancellor. On deemed fit reasons, the Vice-Chancellor shall refer to the Research Board which in turn, shall refer to the Syndicate, if necessary.

20. ORAL EXAMINATION

20.1 The Doctoral Committee shall recommend a panel of three examiners from recognized institutions within India for constitution of an Oral Examination Board.

20.2 The Oral Examination Board shall be constituted by the Vice-Chancellor as follows:

a. Examiner of the thesis in India or a specialist in the subject from the panel (in the absence of the former)	Member
b. A specialist from a recognized institution from the panel	Member
c. Supervisor of the candidate in the University	Convener

provided that the Vice-Chancellor, if he deems it necessary may nominate the member from outside the panel and the Joint-Supervisor as an additional member.

20.3 The Oral Examination shall be conducted as “Open Defence Type” examination.

20.4 On satisfactory completion of viva-voce examination the candidate shall submit a copy of the thesis in CD ROM duly certified by the supervisor that all the corrections have been duly carried out as suggested by the examiners if any, for UNIVERSITY ARCHIVES

20.5 If the performance of the research scholar at the Oral Examination is reported by the Oral Examination Board to be NOT SATISFACTORY, the research scholar may opt to reappear for the Oral Examination at a later date (not later than 6 months

from the date of the first Oral Examination). On the second occasion, the Oral Examination Board shall include one more examiner nominated by the Vice-Chancellor.

- 20.6 If the performance of the candidate at the oral examination on the second occasion also is reported to be NOT SATISFACTORY, the Vice-Chancellor, if he deems it necessary, shall refer the remarks of the Oral Examination Board, along with the thesis and comments of the Examiners, to a Committee constituted for this purpose and the decision of the Vice-Chancellor shall be final.

21. AWARD OF Ph.D. DEGREE

If the report of the Oral Examination Board is SATISFACTORY, the candidate will be awarded the Ph.D. Degree with the approval of the Syndicate.

22. PUBLICATION OF THESIS

Papers arising out of the thesis may be published by the research scholar. However, the thesis as a whole shall not be published by the candidate without the specific approval of the Vice-Chancellor.

23. THE ACT OF PLAGIARISM

- 23.1 In the case of research scholars who have copied a dissertation / thesis / book for M.Phil. / M.S. or Ph.D. Degree his / her thesis shall be forfeited and his / her research registration shall be terminated in this University and also he / she shall be debarred to register for any other programme in this University.
- 23.2 For the abatement of above such action, the recognition of his / her supervisor shall be withdrawn for a period of 5 years and he / she shall be debarred from guiding the research scholars for any research programme in this University till such period.

24. POWER TO MODIFY

Notwithstanding all that has been stated above, the Syndicate has the right to modify any of the above regulations from time to time.