KERALA TECHNOLOGICAL UNIVERSITY

CET campus, Thiruvananthapuram-695 016
Ph: 0471 2598122; Fax 2598522 www.ktu.edu.in   Email: research@ktu.edu.in

NOTICE

A draft research regulation is published by the Kerala Technological University. Suggestions are invited. Please post your suggestions and comments at **research@ktu.edu.in** on or before 5 pm on 30th June 2015.

Registrar

Ph.D. REGULATIONS (Draft)

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Kerala Technological University

Ph. D –Regulations

Introduction

Kerala Technological University (KTU) offers research programmes in various disciplines of Engineering, Technology and Inter-disciplinary areas leading to the award of the Degree of Doctor of Philosophy (Ph. D). The rules and regulations regarding eligibility, selection, registration, supervision, submission and evaluation of thesis, conduct of Viva-voce will be regulated as follows.

1.   Categories of Admission

There will be THREE categories of Ph.D admission as given below

(i) Full time scholars of the University with or without fellowship

(ii) Faculty members of the University or Affiliated College who will be admitted to pursue research towards Ph.D degree while working

(iii)External scholars who work in research organisations or R&D centres recognized by Kerala Technological University for the purpose of external registration.

2.Eligibility

2.1 For admission

Candidates with a Master's degree in Engineering/Technology or with a Master's degree by research in Engineering/Technology with a minimum of 65% marks or CGPA of 6.5 are eligible for admission to the Ph.D program with the stipulation that admission to M.Tech should have been based on a valid GATE score. SC/ST candidates and differently abled persons are eligible for admission with

minimum of 55% marks or equivalent CGPA of 5.5 at M.Tech level. Other conditions remain same as those for the general category candidates.

Candidates with Master's degree in Engineering/Technology having minimum THREE years of teaching experience in AICTE/NAB accredited institutions or having minimum THREE years' experience in a reputed industry or candidates who have fellowship/scholarship support from any Government agency are exempted from the requirement of GATE score for M.Tech studies.

2.2 For supervision of research

Faculty members in the University departments /affiliated colleges having Ph.D degree with minimum 2 years' teaching/research experience after acquiring Ph.D and having minimum of one post Ph.D research publication in Science Citation Index(SCI) journals are eligible to supervise the research work of a Ph.D candidate. A reputed scientist/academic with the aforesaid academic qualification and publication profile but with out an affiliation may be also permitted by the Dean (Research) of the University to be the Research Supervisor along with a Co- Supervisor who fulfils the requirements in toto to be a Research Supervisor. At any time a faculty member can supervise a maximum of FIVE scholars only including Ph.D scholars,if any, in other universities/institutes.

The Research supervisor who retires after supervising a scholar for three years shall continue to supervise the research scholar. He/she shall, with the concurrence of the University, identify a Co- supervisor from the department/College before SIX months of the retirement.

3.0 Place of Research

Academic departments or constituent colleges of the University and affiliated colleges, where post graduate programs in Engineering are successfully carried out

for at least TWO batches are eligible to offer doctoral program. Such departments/colleges shall do a self-assessment of their capabilities for undertaking research at doctoral level and the Academic Head of the Department/College should give a certificate to that effect. In the case of external registration for Ph.D, the research work is carried out in the parent organisation of the scholar subject to fulfilling the mandatory residential requirement at the place of research as stipulated by the University.

4.0 Selection procedure

The applications for research program are invited by the University department or by the College. The University shall decide the selection procedure for admission. The selection may be through discipline wise common written tests and/or personal interview. The selection of the candidate is the responsibility of the University department or the College subject to the instructions of the University from time to time and from case to case and subject to ratification by the University. Selection of the candidate will be provisional until the final approval by the University.

5.0 Admission

Once the selection process is completed and on ratification by the University,the selected candidates will be admitted to the Ph. D programme of the University and allotted to respective college/department after payment of fees and verification of all records.

6.0 Research Supervisor

Allotment of students to the Research Supervisor will be made by the academic head of the College/ University Department subject to ratification by the Dean (Research) of the University and taking into account the research goals of the department and preferences of the research scholars and Research Supervisor.

7.0 Co - Supervisor

Depending on the nature of the research to be carried out and the preferences of the and the research scholar, another faculty member may be nominated as a Co-Supervisor. If the Supervisor is about to retire (within three years), appointment of a Co- Supervisor shall be mandatory. Recommendation for a Co-supervisor shall be made with valid reasons and justification. Co-supervisor may be also from a sister institution (educational/R&D) if the situation warrants. But they should satisfy the eligibility criteria as given in Section 2.2 of this document. Co-supervisor is appointed by the academic head of the College/Department subject to ratification by the Dean(Research) of the University. In any case there shall not be more than two guides for a research scholar.

8.0   Doctoral Committee (DC)

8.1 Composition of the Doctoral Committee

The University Department/College will recommend to the Dean (Research) of the University a panel of experts for inclusion in the Doctoral Committee for each research scholar depending on the area of research. The DC is constituted by the Dean(Research) of the University.

Depending on the availability of experts and the area and nature of research, Dean(Research) of the University constitutes the Doctoral Committee normally from the panel of names provided by the academic head of the College / the University Department.The constitution of the DC will be as follows:

Dean (Research) of the University or his/her nominee - Chairman

Academic head of the College/University department -   Member & Convenor

Research Supervisor and

 Co-Supervisor (if any)   -   Member/s

Two faculty members of the department/College with doctoral degrees – Members

(Internal members)

Two faculty members/scientists from sister organizations with specialisation in the Scholar's research topic.

(External members)

In case any member goes on leave exceeding one year duration, or resigns or retires from the Institute, the Chairman, Doctoral Committee, on recommendation of the academic head of the College and the Research Supervisor shall nominate an alternate member.

8.2 Functions of the Doctoral Committee

(i) Evaluation of research facilities at the place of research

(ii) Registration of the selected candidate for Ph.D program

(iii) Prescribing the courses work for the research scholar

 (iii) Nomination & approval of Co-Supervisor

(iv) Conduct of comprehensive viva of the scholar

(iv) Progress review of the scholar's research work

(v) Nomination of thesis examiners

(vi) Review of the examiners' reports on the thesis

(vii) Conduct of the Oral Examination

The meetings of the DC should be convened atleast once a year in the first three years of registration of the candidate and a minimum of twice a year thereafter.It is compulsory that atleast one internal member and one external member are present in the DC meetings.

9.0 Registration

The Doctoral Committee will meet first normally within a month of being constituted, and certainly not later than two months of admission of the candidate.The Doctoral Committee shall fix/approve the proposed research topic,the date of registration for the Ph. D program, considering the recommendation of the Research Supervisor and prescribe/approve the courses of study in its first meeting.

10.0 Course Work

Doctoral Committee in its first meeting prescribes   two compulsory courses and a minimum of four electives of which the scholar has to undergo any two. In addition,Research Methodology is a compulsory course, if this has NOT been undergone in Post Graduate level by the research scholar. The number of courses to be undergone by the research scholar over and above the minimum prescribed is at the discretion of the Doctoral Committee.

All courses shall be at the post graduate level of the college. In case no suitable courses are available, the Chairman of the DC may allow courses of allied departments/institutions. Offering of new courses by the department suitable for the research may also be resorted to under exigencies of circumstances.

The DC may give credit to courses already undergone by the Research Scholar in the Institution or in sister institutions in the last four years, provided the course contents and the evaluation pattern are similar.Credit to courses, other than Research Methodology, already undergone by a Research Scholar will not be considered if they were credited for the award of any previous degree. UG courses, may be prescribed as additional courses. In all prescribed courses, the research scholar should earn minimum grade equivalent to the Grade D of Kerala Technological University.

11. Monitoring of Progress

A registered research scholar shall submit a written progress report in the required format annually for the first three years, and every six months thereafter. It is the responsibility of the Convener of the DC to arrange for the DC meetings regularly and on time.

Scholars should submit progress report through the Research Supervisor   to the academic head of the College / University department and to the Chairman and members of DC every semester. This should be done well in advance of the DC meeting for reviewing the progress of the scholar. After DC's review/evaluation of the progress, on DC's recommendation the scholar becomes eligible for enrolment. Enrolment defines the continuance of the research program by the scholar and should be done at the department/college where other mandatory requirements such as payment of fees are also required to be fulfilled.

Continuance of registration and award/continuance of scholarship/Research Assistantship (if any) will be based on the recommendation of the Doctoral Committee. Inadequacy of effort/progress can be a reason for cancellation of registration.

12.0 Comprehensive Examination

Every Ph.D scholar shall appear for and perform satisfactorily in a Comprehensive Examination. The objective of the Comprehensive Examination is to test the general competence of the research scholar and the breadth of his/her knowledge in his/her discipline and areas related to his/her field of research.

The Comprehensive Examination shall be conducted by the Comprehensive Examination Committee, consisting of the Doctoral Committee members of the

scholar and at least two other members nominated by the Chairman of Doctoral Committee. The comprehensive exam shall usually consist of a written test and an oral examination.

If the performance of a research scholar in the Comprehensive Examination in the first attempt is not satisfactory, he/she will be given one more opportunity to appear for the comprehensive examination within six months of the first attempt. If a candidate fails to clear the comprehensive exam in two attempts, his/her registration shall be cancelled.

The Comprehensive Examination Committee shall intimate to the research scholar sufficiently in advance the scope of the Comprehensive Examination, so as to enable the scholar to adequately prepare for it.

The Ph.D research scholars are normally expected to complete the Comprehensive Examination successfully within a year of his/her registration for the programme and in any case not later than three semesters after the registration.
For both written and oral components for comprehensive examination, the DC shall decide the modalities subject to approval by the Dean(Research) of the University.

13.0 Research Proposal

.   After successful completion of comprehensive examination, there should be a detailed presentation of the   Research Proposal   and progress report by the research scholar in the subsequent meeting of the DC. The research proposal should contain: the title (need not be exact) of the intended study, justification/motivation of the study, international and national status of the research topic, conceptual model/hypothesis, specific objectives, detailed methodology, proposed year wise time frame for the completion of the proposed

research work (in a chart form), expected outcome/deliverables, and a brief bibliography.The Research proposal meeting is open to all where non-DC members also may be present.This is considered as the 1st Seminar by the research scholar.The Research Proposal meeting of the DC shall be conducted within TWO years of registration of the research scholar. Any delay in conducting the Research Proposal meeting shall be got approved by the Chairman DC and should be informed to the Dean(Research) of the University. The research scholar shall make suitable modifications,course corrections in the research work incorporating the suggestions of the DC in the Research Proposal meeting .

14.   Enrolment

All research scholars, are required to enroll each semester on the stipulated date till the submission of thesis. Payment of the requisite fees and approval by the academic head of the College of the satisfactory progress of research work are pre-requisites for enrollment. The enrolment will be completed only after successful completion of progress meeting during the year/semester.

The enrolment will be cancelled if the progress is not satisfactory.

15.   Duration for completion of research towards Ph.D

The minimum period of study and research for regular full time research scholars under Kerala Technological University from the date of registration for the Ph. D to the date of submission of the thesis shall be 24 Months. Research Scholars should submit the thesis within 5 years from the date of registration. The Doctoral Committee may extend the period of submission of the thesis by further 2 years for regular full time research scholars. For research scholars under external registration, an additional year [5+2+1 = a total of eight years] may be allowed for submission of thesis.

16. Withdrawal

A scholar may be permitted by the Dean (Research) to withdraw from the programme for a semester or longer for reasons of ill health or on other valid grounds duly recommended by the Doctoral Committee. Normally, a scholar will be permitted to discontinue from the programme only for a maximum continuous period of two semesters.

17.Cancellation

The registration of a research scholar whose progress is not found to be satisfactory by the Doctoral Committee or who has not enrolled is liable to be cancelled. The registration of a research scholar who has not submitted his/her thesis before the end of the maximum permissible period as in Section 15 above will be cancelled. Once cancelled, the registration may be revived only with the explicit permission of the Vice Chancellor of the University.

18. Publication of Research Output

For a research scholar to submit the synopsis on completion of the research, there must be visible research output by way of publications in reputed Journals and conferences. A list of Science Citation Index Journals [SCI journals] shall be prepared by every department /College for guidance. Award of Patents may also be taken as valid research output in lieu of publications. The DC takes decisions on such matters and such decisions shall be got ratified by the Dean(Research) of the University.

A research scholar is expected to publish at least one paper in an SCI Science Citation Index [SCI] journal and another one in an international/national conference conducted by societies of impeccable reputation. A list of such conferences shall also be collected by the department.

19. Submission of Synopsis

On satisfactory completion of the prescribed courses, the comprehensive examination and the research work, the scholar shall submit the requisite copies of the Synopsis of his/her research work in the required format through the Research Supervisor(s) and the Academic Head of the College/ Department to the Dean(Research) of the University for consideration by the Doctoral Committee.

Prior to submission of the Synopsis, the scholar is required to give a second seminar talk of a minimum of 45 minutes duration on his/her research work. Further, the scholar should have at least one paper either published or accepted for publication in a journal as specified in Section 18.

The research scholar shall present the Synopsis before the Doctoral Committee.

The Doctoral Committee on consideration of the work content and its quality decides on the acceptance or otherwise of the Synopsis. On acceptance of the Synopsis,the DC permits the research scholar to submit the thesis. DC also recommends a panel of at least eight examiners from outside the College/Department to the Dean(Research) of the University. It is mandatory that the examiners recommended in the panel should be of good reputation and must be from national Institutes or Laboratories and may include those of good professional standing from foreign Universities.

20. Submission of Thesis

The scholars should submit the synopsis along with first draft of thesis in hard and soft copies at the synopsis meeting. However, a maximum of two months' time will be given to improve the thesis and to incorporate changes/suggestions made by the DC before the final submission. The research scholar shall, within two months of acceptance of the Synopsis, submit requisite copies of the thesis. The

Doctoral Committee may in exceptional cases grant additional time beyond two months on request from the scholar for valid reasons.

The guidelines for use of anti-plagiarism software for the Ph.D thesis are as follows:

1. the scholars have to certify that the software "Turnitin" or any other standard software / platform was used for checking against plagiarism.

2. The Research supervisor has to ensure checking against plagiarism through any standard software before submission of the PhD thesis and endorse the undertaking of the scholar.

3. The Research supervisor may obtain a special relief from this checking from the Dean (Research) on grounds of IP implications or National Security, if applicable.

21. The thesis Examiners

The thesis shall be referred to two examiners chosen by the Vice Chancellor (VC) or his nominee normally from among the panel of examiners recommended by the Doctoral Committee at the synopsis meeting. The VC, if deemed necessary,may select examiners from even outside the Panel given by the DC.

22. Reports from Examiners

The examiners are expected to send the report on the thesis within two months from the date of receiving the thesis. In case of undue delay in receiving the thesis report, the VC or his/her nominee shall appoint another examiner from the approved panel of examiners for evaluating the thesis.

If one of the two thesis examiners declares the thesis as not commended, the thesis shall be referred to a third examiner from the approved panel . If two examiners,

after referral to a third examiner,when necessary, report the thesis as not commended, the registration of the scholar shall stand cancelled.

If two Examiners recommend the thesis for the award of Ph.D, the Doctoral Committee will consider the reports and recommend for the conduct of Viva-voce. For the constitution of the Viva-voce board,a panel of four names of subject experts will be recommended by the DC. The Viva-voce in both these cases will be conducted normally not earlier than two weeks from the date of the constitution of the Viva- voce board.

If the examiner/s suggest/s resubmission of the thesis after revision the research scholar will be allowed to resubmit within the time stipulated by the Doctoral Committee.

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

23. Viva-Voce/ Open defence

The following is the composition of the Viva – voce Board:

1.	Dean(Research) of the University or nominee	Chairman
2	Academic Head of the College/Department	Convenor/ Member
3.	One of examiners of the thesis from within the country	Member
4.	One subject expert from a panel of four names recommended by the DC and chosen by the VC or his/her nominee.	Member
5.	Research Supervisor(s)	Member/s

The Doctoral Committee members of the Research Scholar concerned will be invitees to the Viva-voce.

E-copy of the thesis shall be circulated among the members and invitees prior to the Reports Meeting and Viva-voce examination of the thesis. The written response of the candidate to the examiners' queries as well as the modified e-thesis be circulated prior to the Viva-voce / DC meeting

The viva voce board will examine the scholar on his/her thesis work and evaluate his/her performance as satisfactory or otherwise. The viva voce board will ensure that the scholar answers satisfactorily the questions raised by the thesis examiner(s).

The viva voce board may also recommend revision to be made in the final version of the thesis after taking into consideration suggestions of the examiners who evaluated the thesis and the discussion at the viva voce.

If the performance of the research scholar in the Viva voce is satisfactory, he/she will be recommended for the award of Ph.D. degree with the approval of the competent authority of Kerala Technological University.

The Chairman of the Viva-voce board shall forward the thesis to the Dean(Research) of the University certifying that the revisions recommended by the Viva voce board, if any, have been incorporated in the copy of the thesis along with the report of the Viva voce board.

If the report of the Viva voce board declares the performance of the research scholar not satisfactory, he/she may be asked to reappear for Viva voce at a later date (not earlier than a month and not later than six months from the date of the first Viva voce). On the second occasion, the Viva voce board will also include the

members of the Doctoral Committee. If the Viva voce board on the second occasion also evaluates the performance of the research scholar not satisfactory, the matter will be referred to the VC for a decision.

24.   Award of degree

The award of Ph.D degrees to the scholars who have completed all the requirements for the award of   Ph.D degree as and when approved by the Senate and Board of Governors will be considered on request so as to reduce the period of waiting by scholars for getting the degrees.

25. Over-riding provision

Anything that is not explicitly covered in Sections 1 to 24 above with regard to Ph.D of KTU will be referred to the Vice-Chancellor for his/her decision and the decision will be final.

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