

ॐ अमृतेश्वर्यै नमः



AMRITA VISHWA VIDYAPEETHAM

**Ph.D. (Doctor of Philosophy) Program
Policies and Procedures
(Also known as: Ordinances, Rules, and
Regulations)**

(ENGINEERING AND PHYSICAL SCIENCES)

September 14, 2009

Preamble

1. The name "Amrita Vishwa Vidyapeetham" will be abbreviated as "the University" in this document.
2. For the purpose of this document, Centres shall be considered as equivalent to Departments, and Centre Heads as equivalent to Department Chairs.
3. The Chairman for Post Graduate Programmes (or another title, as appointed by the Vice Chancellor with responsibilities stated herein), hereafter referred to as Chairman, PGP, has primary responsibility over Ph.D. Programs.
4. The Chairman, PGP shall work closely with the Department Chairs, Deans, and Centre Heads to ensure the successful conduct of the Ph.D. programs, and shall report all major actions to the Vice Chancellor for approval.
5. The award of Ph.D. degree shall be in accordance with the policies and procedures of the University, as well as other ordinances, rules, and regulations of the University.

Policies

1. Completion of a minimum post-graduate/ doctoral level coursework of 12 credits for doctoral students entering with M.E./M.Tech./M.S. or equivalent degree; a minimum post-graduate/ doctoral level coursework of 21 credits for doctoral students entering with B.E./B.Tech./B.S./B-Level/ MSc/ MCA or equivalent; a minimum of 18 credits for those with MSc/ MCA/B.E./B.Tech./ B.S./ B-Level or equivalent followed by MPhil; and independent research leading up to a successful defense of a Doctoral Thesis Dissertation are required for the award of the Ph.D. degree. The Doctoral Committee may prescribe more course work than the minimum credits prescribed whenever it is required.
2. The Board of Management alone will have the power to add/make amendments to the Policies as deemed fit from time to time.

Procedures

1. Authorization to Offer Ph.D.

A Department (or Center) of the Amrita Vishwa Vidyapeetham, intending to offer a Ph.D. Program is required to make a Ph.D. approval application to the PGP-Chairman. Such an application must include faculty who will be serving as Ph.D. advisors and their areas of specialization, suggested course work structure, and other faculty from within and outside the University who can assist with the Ph.D. program together with all of their specialities.

The PGP-Chairman will forward the application with his or her recommendation to the Vice Chancellor for approval.

If approved, the Ph.D. Program will be known as: Ph.D. in <Name of the Department/Center> (Area of Specialization). For example, if the Ph.D. is being offered in the field of Computer Science Department with specialization in Wireless and Mobile Systems, it will be called Ph.D. in Computer Science (Wireless and Mobile Systems).

1. Admission

1.1 Eligibility

The applicant should possess either (a), (b), (c) or (d):

- a. M.E. (Master of Engineering), or M.Tech. (Master of Technology), or M.S., or equivalent degree
- b. B.E. (Bachelor of Engineering), or B.Tech. (Bachelor of Technology), or B.S. (4-year Bachelor of Science), or equivalent degree with a minimum of one year academic experience.
- c. M.Sc. (Master of Science following a 3 year Bachelor of Science- B.Sc. degree), or Master of Computer Applications (M.C.A.), or an equivalent degree
- d. DOEACC B-Level Course with a minimum of one year academic experience.

Applicants should show evidence of strong academic record. Excellent test scores on standardized graduate aptitude tests such as GATE or GRE, and publications in recognized conferences and journals are examples of such evidence.

1.2 Application

The Call for Applications will generally be posted twice a year on the University website, accessible via <http://www.amrita.edu>. Each Applicant should submit, in addition to his or her degree certificates and grade/ mark sheets, a Statement of Purpose (describing his or her research interests), and up to three areas of interest in the order of preference for PhD programme.

1.3 Entrance Test and Interview

The Committee on Post Graduate Programmes, chaired by the PGP-Chairman will screen the applications and call the selected applicants for an entrance test followed by an interview. The Interview Committee constituted by the CPGP will examine the applicants' background and aptitude for research. Based upon the entrance test and interview performance and prior academic record, the Committee shall give its recommendation to the CPGP. The CPGP will finalize the admission and notify the selected applicants the date of joining. All prospective thesis advisors may be involved in the selection process and their consent obtained before being appointed as the thesis advisor for any applicant.

Whenever required, the Committee may request additional evidence, such as letters of recommendation, copies of claimed publications, etc.

1.4 Admission

There are two possible categories of admission for any applicant:

- a. Full-time doctoral students:** Such students are entirely focused on carrying out their course work, research, and other requirements of the Ph.D. Program at the University.

Students admitted under this category may be employed as project staff on a research project; however, the research project must have the student's thesis advisor as either a PI or a Co-PI, and the subject areas of the research project and the student's proposed doctoral research should overlap.

- b. Part-time doctoral students:** Such students are either full-time employees (e.g., faculty or project staff not covered under (a)) of the University, or employees of other organizations (such as other colleges, universities, R&D centers, etc.). They are permitted to proceed at a slower pace in their Ph.D. Program at the University.

2. Degree Requirements

2.1 Thesis Advisor and Doctoral Committee

Every doctoral student is assigned a Thesis Advisor and a Doctoral Committee by the PGP-Chairman at the time of admission to the Ph.D. Program. The Thesis Advisor shall be a regular, adjunct, or emeritus faculty member of the University with a Ph.D. degree and established research record. If he is a fresh PhD, a senior faculty member will be associated as a co-advisor. The Doctoral Committee will consist of the Thesis Advisor, a Convener, and a faculty member from the department from which the doctoral student credits the minor course (see section 2.2, Course Work). In addition, if in case the Doctoral Student has been assigned a Co-Advisor, the Co-Advisor automatically becomes a member of the Doctoral Committee. Each member of the Doctoral Committee must necessarily have a Ph.D. degree. The Convener will be appointed by the PGP-Chairman. The Doctoral Committee will be responsible for all academic matters connected with the Ph.D. Program of the Doctoral Student, including prescribing the Course Work, forming the Comprehensive Oral Examination Committee, monitoring the progress of the Doctoral Student, and suggesting the panel of examiners for thesis evaluation.

Generally, a faculty member may not serve as the Thesis Advisor for more than eight doctoral students at a time.

2.2 Course Work

A Doctoral student is expected to complete the prescribed courses (spelt out under Policies) as part of his or her doctoral program. The course work for a Doctoral Student is proposed by the Doctoral Student's Thesis Advisor, keeping in view the Doctoral Student's research interests, background and preparation needed to carry out the research. The course work so proposed requires the approval by the Doctoral Committee of the student, and communicated to the CPGP. All the courses shall be University approved courses. A Doctoral Student may be permitted to transfer a limited number of courses which he or she has completed in the recent past at another reputed University or at Amrita itself. The Doctoral Student may also be permitted to take a limited number of courses from another reputed University.

All doctoral students have to complete a Minor Course of 3 credits from another department (in the same or another School of the University). It is essential that the Minor Course does not have any significant overlapping with the research area of the Doctoral Student.

2.3 Comprehensive Oral Examination

After the successful completion of the course work, all doctoral students must take a Comprehensive Oral Examination normally within a period of 2 years after the registration. The Thesis Advisor frames the syllabus for the examination. The Doctoral Committee members suggest names of experts in the area to serve as examiners. The PGP-Chairman chooses two examiners who along with the Doctoral Committee form the Comprehensive Oral Examination Committee. The Convener of the Doctoral Committee will be the Convener of the Comprehensive Oral Examination Committee.

2.4 Changes in Thesis Advisor and/or Doctoral Committee

After the passing of the comprehensive oral examination, a doctoral student will have the option to request changes to his/her Thesis Advisor and/or Doctoral Committee, possibly owing to changes in his/her research topic/areas. Such changes are to be approved by the CPGP. Under special circumstances, such changes may be permitted at any stage.

2.5 Independent Research

A Doctoral Student is expected to carry out independent research work under his/her Thesis Advisor.

2.6 Thesis Proposal and Advancement to Candidacy

Within one year after the successful completion of the comprehensive oral examination, the Doctoral Student is required to present his/her thesis proposal to the Doctoral Committee for approval. Then it is forwarded to the CPGP for ratification.

2.7 Seminar

After advancement to candidacy, all research scholars are required to present at least two seminars (open to public) on their research. This will help in getting the feed back and comments on the research work which may be suitably incorporated in the thesis. The seminar notice will be displayed in all the departmental notice boards atleast a week in advance and a copy sent to the CPGP.

2.8 Teaching

After advancement to candidacy, all doctoral students from teaching fraternity are required to assist the senior faculty members in the teaching of at least two semester long courses during their Ph.D. program. The PGP-Chairman may suggest additional teaching exercises (including teaching of another course) in case of any observed significant drawbacks in the teaching.

2.9 Publication

Every research scholar is expected to have at least one paper in the area of doctoral research accepted for publication in a reputed refereed journal/international conference by the time of taking his or her Thesis Defense (see Section 2.12).

2.10 Thesis Synopsis and Pre-Defense

Once the Thesis Advisor is satisfied that the caliber and quantum of the research work carried out by his/her research scholar is sufficient for the award of a Ph.D. degree by the University, the research scholar is required to submit a synopsis as well as present a seminar to the Doctoral Committee. The synopsis and the seminar presentation may both be repeated until the Doctoral Committee is satisfied that the research scholar is ready to start writing his/her thesis.

Then the Convener of the Doctoral Committee forwards the Research Scholar's Thesis Synopsis, together with the names and addresses of at least eight experts to evaluate the Research Scholar's Thesis, to the CPGP.

The Synopsis should be about twelve pages and include an Introduction, Objectives of the Research, a brief Literature Survey, a detailed report on the Experimental and/or Theoretical Investigation, important Figures and Photographs, and the important Conclusions drawn. The Synopsis is to be submitted about six weeks in advance of the probable date of submission of the Thesis.

The experts suggested to evaluate the Research Scholar's Thesis are required to be external to the University from leading academic/ R & D Institutions including a few from outside the country.

2.11 Thesis Submission and Evaluation

The Research Scholar should submit five copies of his/her thesis to his/her Doctoral Committee, preferably within a period of six weeks from the date of submission of the synopsis and the Convener will then forward the same to the PGP-Chairman. Normally, from the list of Reviewers received from the Doctoral Committee, the PGP-Chairman forwards the Research Scholar's submitted Thesis to two Expert Reviewers who are agreeable to evaluate the thesis. Since the Thesis Advisor is also an examiner, a copy of the thesis is sent to him/her also.

Each Reviewer can give one of three possible evaluation Reviews: (i) Accept, (ii) Accept with Modifications, or (iii) Reject.

- If all the three Reviewers give "Accept", or if one/ two of the Reviewers give "Accept" and the other(s) gives "Accept with Modifications", or if all the three Reviewers give "Accept with Modifications", the Research Scholar can proceed to Thesis Defense after incorporating the suggested modifications.
- If two of the Reviewers give "Reject", the Thesis is rejected, and the Research Scholar is required to exit the Ph.D. program.
- If one of the Reviewers gives "Reject", the PGP-Chairman will send the Research Scholar's Thesis to a chosen fourth external Reviewer. If the fourth reviewer also rejects, the Research Scholar is required to exit the Ph.D. program. If the fourth reviewer gives "Accept" or "Accept with Modifications", the Research Scholar can proceed to Thesis Defense after incorporating the suggested modifications.
- If any of the Reviewers makes a qualified recommendation without suggesting specific revisions, the Chairman-CPGP will consult an internal expert group to arrive at an appropriate solution for the problem.

The modifications include carrying out additional work to meet the required quantum of work in addition to quality. The Doctoral Committee has to ensure that the modifications suggested are carried out and the same is approved by the CPGP before proceeding to the Thesis Defense.

The Thesis should show evidence of critical evaluation and judgment and good mastery of the background literature of the subject of research, as well as the Research Scholar's capacity to relate his/her specialized research to the broader framework of the general discipline within which it falls. It should display a substantial original and creative contribution to the advancement of scientific, engineering, and/or technological knowledge, design or development, in the widest sense to include instrumentation and applied work of an innovative nature.

The exact format of the submission to be followed etc. will be available in the office of the PGP-Chairman.

It is recommended that the external examiners be given at most eight weeks to reply with an evaluation.

2.12 Thesis Defense and Final Recommendation

The date, time, venue and title of the Thesis Defense will be announced widely and well in advance to enable all those interested to participate.

The Thesis Defense is a Seminar Presentation by the Research Scholar and he is required to give an account of the research work reported in the thesis highlighting the main contributions made which is open to all. This will be followed by an in camera oral

examination wherein the Doctoral Committee and at least one of the external experts who evaluated the thesis constitute the Board. The Convener of the Doctoral Committee serves as the Chair of the Board. If even one of the external examiners could not be present, the substitute examiner identified by the Chairman-CPGP will be present. The candidate has to answer the queries raised by the thesis examiners. For this purpose, the examiners reports will be made available to all the members of the Oral Examination Board. The examiners are free to cover the general background of the subject in the light of the requirements for the thesis. Where part of the work has been undertaken jointly with others, the examiners should satisfy themselves as to the adequacy of the candidate's own contribution.

A pass in the oral examination is compulsory. If a candidate fails in the oral examination in the first instance, he/she may be allowed to appear once again after a lapse of three months, but not later than six months from the date of first appearance. A candidate who fails once again in the reexamination shall not be eligible for the award of the degree.

If the candidate passes the oral examination, the Oral Examination Board shall consolidate the recommendation for the award of the PhD Degree based on:

- i Report of the examiners who evaluated the thesis
- ii. Evaluation of the candidate's performance in the oral examination

The consolidated recommendation shall be forwarded by the Chairman of the Oral Board to the PGP Chairman who in turn forwards it to the Vice Chancellor.

The candidate should submit two corrected hard copies (one for the department and another for the University library) and one soft copy of the thesis (to be submitted to the UGC).

2.13 Award of the Ph.D. (Doctor of Philosophy) Degree

Upon approval by the Vice Chancellor, and subsequent ratification by the Academic Council and the Board of Management of the University, the Research Scholar is presented to the Chancellor (or Chancellor's nominee) for award of the Ph.D. Degree at the next Convocation of the University.

3. Progress Reports, Duration, Appeals, and Amendments

3.1 Progress Reports

Every six months, each Doctoral Student or Research Scholar is required to submit a half yearly progress report to the Doctoral Committee for their review, comments, and any suggestions for remedial measures. The Doctoral Committee forwards the same to CPGP. The PGP-Chairman will also hold an annual review of all doctoral students and research scholars in a meeting with all of the thesis advisors and selected additional members present. Continued absence of satisfactory progress, as determined by the PGP-Chairman, may be sufficient grounds for (i) discontinuation of any fellowship or assistantship that has been previously awarded to the Doctoral Student or Research Scholar, or even (ii) dismissal from the Ph.D. program.

The Office of the PGP-Chairman will maintain a specific format for the submission of the progress report.

3.2 Duration

The normal period of completion for a full-time doctoral student is 4 years; the minimum being 3 years and maximum being 6 years. In the case of part-time doctoral students, as

well as those admitted with B.E./B.Tech./B.S./M.Sc./M.C.A./B-Level, the corresponding periods are extended to 5 years, 4 years and 7 years, respectively.

3.3 Appeals

A Doctoral Student or Research Scholar may petition to the PGP-Chairman for a waiver/substitution of any requirements, rules, or regulations as they pertain to his or her specific situation. The PGP-Chairman may seek the advice of the student's Doctoral Committee or the advice of an ad hoc subcommittee constituted (by the PGP-Chairman) solely to study the merits of the case. If the student is not satisfied with the outcome, he or she may further appeal to the Vice Chancellor, whose decision is final and binding.

3.4 Amendments

Amendments to these procedures may be made with the approval of the Vice Chancellor and subsequent ratification by the Academic Council and Board of Management.