

Regulations for Doctor of Philosophy (Ph.D.)

2021



**Shiv Nadar University
Chennai 603110**

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1. DEFINITIONS AND NOMENCLATURE

In the Regulations, unless the context otherwise requires,

- i. "University" means Shiv Nadar University Chennai, Tamil Nadu, 603110.
- ii. "Research Board" means the Board duly constituted by the Vice-Chancellor of the university to oversee the academic research activities of the university.
- iii. "Program" means doctoral program leading to the award of Ph.D. in Engineering/ Technology/ Science and Humanities / Management Sciences/ Commerce, etc.
- iv. "Chairperson" means Head of the Faculty.
- v. "Supervisor" means any faculty member of the university or outside the university who has been recognized by the university to guide the research scholars.
- vi. "Joint Supervisor" means a recognized supervisor to guide the scholars in interdisciplinary research that require more than one expert or to take care of the administrative and research responsibilities of the scholar.
- vii. "Head of the Department" means head of the department of the supervisor.
- viii. "Place of research" for the scholars shall be the department where the supervisor is working.
- ix. "Doctoral Committee" means a committee constituted by the university for each scholar to monitor the progress of his/her research work.
- x. "Scholar" means any candidate admitted by the university either under full-time or part-time category for pursuing research for the award of Ph.D. degree of the university.
- xi. "Specialization" means the discipline of the post graduate degree program such as Environmental Engineering, Applied Electronics, Physics, Finance, Commerce etc.
- xii. "Course work" means a theory subject of PG Program that is prescribed by the doctoral committee for the scholar to undergo as a part of the Ph.D. program requirement.
- xiii. "Publication" means full length research articles reporting new research findings in respective fields comprising presentations on new concepts, the development of innovative methods that include figures, tables, and references; the results of which have a general impact and contribute to the advancement of the particular field, and are always peer reviewed.

2. ELIGIBILITY CRITERIA

- 2.1 Master's Degree of the university or any other UGC recognized university, or any other qualification recognized as equivalent thereto in the fields of study notified from time to time by the university.
- 2.2 A minimum of 60% marks or a CGPA of 6.0 on a 10-point scale in the qualifying examination. In case of SC/ST/differently-abled candidates, 55% marks or a CGPA of 5.5 on a 10-point scale.
- 2.3 Educational qualifications:

Program		Qualification for Admission
(i)	Ph.D. Degree in Engineering/ Technology	M. E./ M. Tech./ M. S. (By Research) in the relevant branch of engineering or technology
(ii)	Ph.D. Degree in Science and Humanities	M. Sc./M. S (By Research) in the relevant branch of science and humanities/ M.C.A/ M.A (English/ Communication/ Mass Communication/ Journalism/ Media Arts)
(iii)	Ph.D. Degree in Management	MBA/ Post-Graduate Diploma in Business Management or Administration awarded by Indian Institute of Management (IIM)/ M.S (By Research) in Management/ Any other permissible discipline
(iv)	Ph.D. Degree in Commerce	Master's degree in commerce or a related field OR B.Com. + CA/ ICWA
(v)	Integrated Ph.D. in Engineering/Technology/Management	B.Tech./ B.E with a CGPA > 8.5

3. Ph.D. PROGRAM CATEGORY

Categories of Ph.D. Program available are: Full-time and Part-time. Candidates who satisfy the eligibility criteria as in Clause 2 are eligible to apply for Ph.D. Program.

3.1. FULL TIME Ph.D. PROGRAM

- 3.1.1 Candidates under full-time category shall do research work in the university Departments that are approved research departments of the university, and should be available during the working hours for curricular and related activities.
- 3.1.2 Candidates who clear the selection criteria of the Ph.D. admission of the university and working in the projects undertaken from State/Central/Quasi-Government and fully funded projects in the university Departments shall register for the research Program under the supervisorship of the Principal Coordinator/Investigator of such projects. Such supervisors should be regular teaching faculty as well as recognized supervisors of this university. The scholar should be appointed in a project sanctioned by a funding agency/organization for a period of at least two years. Part employments in different spells or in different projects are not permitted. The Department/Centre where the project is undertaken should be one of the recognized research centers of the university and should also be the working place of the scholar. Project students enrolling as Ph.D. scholars shall go through the same selection process as the other regular candidates. On completion of the duration of the funded project prior to the completion of the Ph.D. requirements, the candidate shall be eligible for any funding support from the university until the completion of the Ph.D. defense.
- 3.1.3 Candidates in employment, who want to pursue full-time study, should be sponsored by their employer, and should avail leave for the minimum duration of the Program (Clause 7) and should get formally relieved from their duty to join the research Program.
- 3.1.4 Candidates who are sponsored by AICTE under Quality Improvement Program for teachers at other colleges and who satisfy the eligibility conditions shall apply for a Ph. D in the full-time category only, in the specializations as notified in the AICTE guidelines.
- 3.1.5 Candidates who are selected at national-level fellowship programs or by any recognized bodies and who satisfy the eligibility conditions as per the regulations

shall apply for Ph. D in the full-time category in the respective specialization.

- 3.1.6 Foreign-nationals sponsored by the government of India or their respective government on any exchange program and who satisfy the eligibility conditions as per the regulations shall apply for the full-time Ph. D in the respective specialization. Foreign nationals are not allowed to register for the part-time Ph.D. program.
- 3.1.7 Full-time scholars shall necessarily sign in the attendance register/biometric devices on all working days at the respective place of research.
- 3.1.8 Candidates with external registration shall necessarily sign in the attendance register on all working days at the respective place of research, for the duration they are residing in the university. After the residential term, they shall present their work for review on a monthly basis and get the approval from the Supervisor for satisfactory progress of the research work.
- 3.1.9 The full-time research scholars shall renew their registration every semester.

3.2. PART TIME Ph.D. PROGRAM

The following categories of candidates are eligible to apply for a Ph. D in the part-time category:

3.2.1. Part Time Internal Scholars:

Full-time teaching faculty members of university departments are eligible under this category. The nomenclature shall continue for such scholars as long as they are in service in the university.

3.2.2. Part Time External Scholars

- i. Candidates who work as full-time teaching faculty of self-financing colleges, government aided colleges or any other educational institutions that are approved by the AICTE/UGC within India.
- ii. Candidates who work in Industrial Units/R&D Departments/National Laboratories/ Units of Government/Quasi-Government or any other research laboratories within India, that are recognized by the university to do research with the university and are sponsored by the respective employer. The nomenclature shall continue for such scholars as long as they are in service in the above Institutions.
- iii. The place of research of the Scholar mentioned in the clauses 3.1.1 and 3.1.2 shall be the working place of the Supervisor.
- iv. The part-time research scholars shall renew their registration every semester.

3.3. CHANGE OF CATEGORY

A change of category (part-time - full-time) shall be approved by the competent

authority only once during the tenure, subject to submission of necessary documents along with the recommendation of the Supervisor(s) and Head of the Department of the Supervisor and the Scholar. Change of category more than once may be considered only under extraordinary circumstances, if the reasons are deemed fit. Change of Category is permitted only for the scholars who have confirmed registration. In case of change of category from full-time to part-time or vice-versa, the minimum period shall be accounted for with whichever is higher. Candidates who opt for a change of category shall not be eligible for a continued fellowship (full-time to part-time) or application for fellowship (part-time to full-time).

4. SELECTION PROCESS

- 4.1 The candidates desirous of registering for the Ph.D. program shall apply by filling all the relevant details mentioned in the online application form available in the university website and submitting it online on or before the stipulated due date as indicated in the notification issued from time to time. The university shall issue a notification for Ph.D. admission twice every year.
- 4.2 Incomplete applications or applications with false information in any respect shall be summarily rejected without any intimation to the candidate.
- 4.3 The university shall screen the applications as per the eligibility norms, and the Centre for Entrance Examinations shall conduct the written test for eligible candidates. **Candidates appearing for the written test should obtain the minimum marks as specified by the university to qualify for the interview process.** *The final selection of the candidates for the Ph.D. admission shall be based on the overall marks secured by the candidates in the written test, qualifying examination (PG degree) and interview. The respective centres of research shall conduct the interview for the candidates who qualify the written test. The successful candidates selected for Ph.D. admission shall be shortlisted based on the cut-off marks fixed by the Research Board.*

5. ADMISSION PROCESS

- 5.1 The selected candidate shall be admitted for the Ph.D. Program in the respective Faculty based on his/her PG qualification. The Research Board constituted by the Vice-Chancellor shall approve and recommend the short-listed candidates for admission to the Ph.D. program in the appropriate specialization, after giving due consideration to the interdisciplinary fields of research (if any).

- 5.2 The session of provisional registration for the Ph.D. program shall be either January or July of the year in which the candidate is admitted.
- 5.3 The selected candidates shall be provisionally registered for the Ph.D. program either in the current session in which the candidate is selected or in the subsequent session, failing which will lead to the cancellation of the candidature.
- 5.4 The progress of research of each candidate shall be monitored and evaluated by a Doctoral Committee (Clause 8).
- 5.5 The Scholar, Supervisor, Joint Supervisor, Doctoral Committee members and Examiners shall not be relatives to one another.

6. SUPERVISORS FOR Ph.D. PROGRAM

6.1. RECOGNITION OF SUPERVISOR

- 6.1.1 The applicant (faculty member) should possess a Ph. D degree, preferably in the relevant areas he/she wishes to carry out the research. The regular full-time teaching faculty in the university Departments are eligible to apply for supervisorship for Ph. Ds to be awarded by the university.
- 6.1.2 The applicant faculty member should have research publications (preferably with SNU Chennai affiliation) in the regular issue of list of journals, with the following minimum requirements:
 - i. A Regular, full-time Professor shall have at least five publications in peer reviewed journals to his/her credit in the past three years.
 - ii. A Regular, full-time Associate Professor shall have at least three publications in peer reviewed journals to his/her credit in the past three years.
 - iii. A Regular, full-time Assistant Professor shall have at least two publications in peer reviewed journals to his/her credit in the past three years.
 - iv. Publications produced during the Ph.D. Program and after the completion of the Ph.D. Program shall be considered for processing the application.
 - v. Among the number of papers mentioned, at least one of the papers should be published after the completion of his/her Ph.D. Program.
 - vi. The published paper content should be in the relevant area of research of the applicant and within the scope of the journal. If self-plagiarism/plagiarism is ascertained in the publications of the applicant, the application will be summarily

rejected, and the applicant will not be permitted to apply for supervisorship for the next two years.

- 6.1.3 The applicant who fulfills the norms will be recognized as a supervisor by the university.
- 6.1.4 Supervisors working in any of the institutes recognized by AICTE/Nationalized laboratories in India, with Ph.D. degree (awarded) from a UGC recognized institution/university and satisfying the supervisorship norms of the university may function as joint supervisors.
- 6.1.5 For interdisciplinary research that requires more than one expert, the Joint Supervisor from other departments/institutions shall be approved by the competent authority based on the request of the supervisor and the recommendation of the Head of the department of the supervisor.
- 6.1.6 A Supervisor shall entertain fresh registration of scholars under his/her supervision up to three years prior to his/her superannuation or leaving service.
- 6.1.7 The recognized supervisors of this university shall not obtain supervisor-ship status from any other university. However, the recognized supervisors can function as joint supervisor for scholars working in association with other reputed universities after seeking appropriate permissions from this university.
- 6.1.8 Any violation of Ph.D. regulations by the supervisor/joint supervisor shall lead to the withdrawal of the supervisorship either permanently or for a maximum period of five years and they shall be debarred from guiding the existing scholars in the university during this period.

6.2. CHANGE OF SUPERVISOR

- 6.2.1. When a supervisor of a scholar happens to be away from the university for less than six months duration, the supervisor can authorize the Head of the Department or another approved supervisor as in-charge supervisor for the candidate, based on mutual agreement, after seeking prior permissions and approvals from the competent authority.
- 6.2.2. When a supervisor of a scholar happens to be away from the university for more than six months and up to maximum of one year, he/she shall continue to guide the scholar, but a supervisor-in-charge (recognized supervisor of the university) shall be nominated by the competent authority based on the request of the supervisor and/or the recommendation of the Head of the Department of the supervisor to take care of the administrative responsibilities of the scholar. The

nominated faculty shall continue as supervisor-in-charge until the supervisor returns or to a maximum period of one year.

- 6.2.3. Under extraordinary circumstances, if the supervisor of a scholar happens to be away from the university for more than one year, either the supervisor-in-charge may be nominated as the supervisor, or an alternate supervisor shall be nominated by the competent authority based on the request of the supervisor-in-charge and the recommendation of the Head of the department.
- 6.2.4. The supervisor who retires from service shall continue to guide a scholar already registered under his/her guidance, provided the provisional registration of the scholar is confirmed, and the scholar submits the thesis within one year from the date of his/her superannuation/leaving-the-service based on his/her written request. If the scholar has not submitted the thesis within one year, a joint supervisor shall be nominated by the competent authority based on the request of the supervisor and/or the recommendation of the Head of the department of the supervisor.
- 6.2.5. When a supervisor migrates to other university, such supervisor's recognition will be cancelled. If some of the scholars had submitted their synopsis or thesis under their guide-ship, supervisors shall be permitted to continue to guide those scholars to complete their research program provided the scholar submits the thesis within one year from the date of migration of the supervisor. However, a joint supervisor from the department shall be nominated by the competent authority based on the request of the Supervisor and/or the recommendation of the Head of the department of the supervisor to take care of the administrative and research responsibilities of the scholar. In all other cases, an alternate supervisor shall be nominated by the competent authority based on the request of the supervisor and the recommendation of the Head of the department of the supervisor.
- 6.2.6. If faculty members leave the university, they can continue as a joint supervisor and continue to provide academic support, after seeking prior approvals from the university.
- 6.2.7. If the Institution in which the scholar works becomes a private university/college, such scholars shall be permitted to continue their research work in the university/college and to submit the thesis under the same supervisor with an approval from the competent authority, provided his/her provisional registration is confirmed. Otherwise, their registration shall be cancelled.

- 6.2.8. If the scholar migrates to other university/Institution/public sector organization, such scholars shall be permitted to continue the research work in the university and to submit the thesis under the same supervisor with approval from the competent authority, provided his/her provisional registration is confirmed. In all other cases, the registration of such a scholar shall stand cancelled.
- 6.2.9. Change of supervisor for a research scholar shall be possible on valid reasons within the maximum period (clause 7) from the date of registration with the consent of both the present and proposed supervisors. In case, the scholar requests for a change of supervisor without the consent of the supervisor, the request shall be considered based on the recommendation of the committee constituted by the Vice-Chancellor. In such cases, the committee's decision is final. If a change of supervisor is approved, the scholar has to work for a minimum of one year with the new supervisor and synopsis shall be accepted only when the scholar has published at least one journal publication (out of the two mandatory publication during the term of the candidature) with the new supervisor.
- 6.2.10. The change of supervisor can be done only once during the entire duration of the program. Under extraordinary circumstances, further change in supervisor will be approved based on the recommendations from the Vice Chancellor.

6.3. NUMBER OF SCHOLARS PER SUPERVISOR

- 6.3.1. A professor, who is a supervisor, shall guide a maximum of 7 scholars as supervisor/joint supervisor at any time.
- 6.3.2. An Associate Professor, who is a supervisor, shall guide a maximum of 5 scholars as supervisor/joint supervisor at any time.
- 6.3.3. An Assistant Professor shall guide a maximum of 3 scholars as supervisor/joint supervisor at any time.

7. DURATION OF THE PROGRAM

- 7.1 The duration of the program and the time for submission of thesis are counted from the date of enrollment for the Ph.D. program.
- 7.2 The minimum duration of the program in Engineering and Technology, for full-time/part-time shall be two/three years, respectively.
- 7.3 The minimum duration of the program in Science & Humanities for **full-time/ part-time** shall be **three/four** years, respectively.

- 7.4 The minimum duration of the program in Commerce and Management for **full-time/part-time** shall be **three/four** years, respectively.
- 7.5 The competent authority shall permit, if the reasons are deemed fit, break of study for the scholar under extraordinary circumstances such as medical grounds and other compelling reasons which warrant his/her absence from the program. However, the break of study period shall not be counted for the minimum duration of the program.
- 7.6 Break of study to scholars shall be granted up to a maximum of **one year**. Such requests with the recommendation of the supervisor and Head of the Department should reach the competent authority prior to availing the break of study. 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 scholars. Break of study period will be counted for the maximum duration of the program (Clause 7.8). The scholar should remit the semester fees during the break of study period.
- 7.7 For candidates who secure a pre-doctoral posting or exchange program in universities/labs/Institutions/Industries outside India, the duration of such posting shall be considered as part of the Ph.D. program in continuation with the years spent at the university. Such candidates are required to return to the university after the posting tenure, to complete the formalities of the Ph.D. degree. Candidates can opt for such postings after securing prior permissions from the university, failing which it will be considered as a case of discontinuation and action will be taken to cancel the registration of such scholars.
- 7.8 The maximum duration for the Program shall be six years for full-time and part-time scholars of all the faculty streams.
- 7.9 Extension of maximum duration: Scholars who do not submit the thesis within the maximum duration of the program (six years) shall apply for extension of time three months prior to the completion of six years with the recommendation of the supervisor. In such cases, a maximum grace period of one year, beyond the normal maximum period of six years shall be granted by the university to enable the scholar to submit the synopsis and thesis. However, the final grace period of six months shall be granted by the Vice- Chancellor only if the scholars submit the synopsis and apply for extension with the recommendation of the supervisor, at least one month prior to the expiry of the previous extension. Double the semester fees as prescribed from time to time shall be paid beyond the normal, maximum duration.
- 7.10 If the scholar fails to submit the thesis within the extended period of one and half

years, the registration shall be cancelled, and the name removed from the rolls.

8. DOCTORAL COMMITTEE

- 8.1 There shall be a Doctoral Committee for every scholar to monitor the progress of research work.
- 8.2 For every scholar, the supervisor shall furnish the details of the Doctoral Committee, which shall constitute of the following members:
- a. Supervisor
 - b. Joint Supervisor(s) if any
 - c. Head of the Department - Chairman
 - d. Expert Member 1: Faculty Member who is a Subject Matter Expert from the Department
 - e. Expert Member 2: Faculty member who is a Subject Matter Expert from the Department
 - f. Expert Member 3: Faculty Member from other Department, with expertise in the field of interest or related field.
- 8.3 The supervisor of the scholar shall be the convener of the Doctoral Committee.
- 8.4 The Joint Supervisor(s), if applicable, should also be a member of the Doctoral Committee.
- 8.5 The Head of the department/director of the centre shall forward the Doctoral Committee minutes to the competent authority. However, the details of Doctoral Committee should be given to the competent authority with a copy to Head of the Department well in advance. The minutes of the doctoral committee meeting will be approved only if prior information is received at the office of the competent authority at least three days before the doctoral committee meeting.
- 8.6 The competent authority shall permit, if the reasons are deemed fit, a change of a Doctoral Committee member for the scholar based on the request of the supervisor under the following circumstances:
- i. Topic of research changed before confirmation of the Provisional Registration.
 - ii. Doctoral Committee member is away from the place of work for more than 2

years.

- iii. Doctoral Committee member is deceased.
- iv. Member does not respond to invitations to attend Doctoral Committee meetings.

In all the above cases or for any other compelling reasons, the Chairperson of the Committee shall nominate an alternate Doctoral Committee member from the panel furnished by the Supervisor.

9. PROGRAM STRUCTURE

9.1 COURSE WORK

- 9.1.1 The Doctoral Committee of a scholar shall meet within three weeks from the date of communication of his/her joining to prescribe the course work relevant to the research.
- 9.1.2 A **minimum of four courses** with a total of 12 Credits (in total) relevant to the area of research and offered under any approved PG Program of the university/SSN College of Engineering/approved-MOOC shall be recommended by the Doctoral Committee. But the scholars shall not have undergone such course work earlier in their PG Program.
- 9.1.3 Only course work registered for after the first Doctoral Committee meeting shall be counted towards this requirement. Any course work already passed by the scholar prior to provisional registration shall not be counted for this purpose.
- 9.1.4 The scholar shall attend classes along with PG students and will be evaluated based on the standard grading scale approved by the university.
- 9.1.5 No change in the course work prescribed shall be made without the approval of the Doctoral Committee and if any change is required, the same should be informed to the department in advance.
- 9.1.6 The prescribed course work shall normally be completed within two years from the date of provisional registration for both full-time and part-time scholars. A maximum of two attempts are permitted for the scholar to pass a course, for both the part-time and full-time scholars, and the courses should be completed within three years from the date of provisional registration. If the scholar fails to complete the confirmation of provisional registration within three years after his/her registration for the Ph.D. program, the registration of the scholar shall stand cancelled.

- 9.1.7 The scholar cannot opt for regularly offered PG electives as a special elective. The scholar shall wait to undertake such course work till when it is offered to the PG students in the Department.
- 9.1.8 The scholars shall secure a **CGPA of 7.0 in the course work** in order to become eligible for the comprehensive examination. The scholar who fails to secure a CGPA of 7.0, he/she shall undertake one more course work relevant to the area of research offered under any approved PG program of the university with the recommendation of the Doctoral Committee or write the arrear examination (only once) for any one/two of the course work undertaken, to improve the CGPA to 7.0 (Best four courses shall be considered, if additional courses are undertaken). A pass in the Comprehensive Examination is required for provisional confirmation of Ph.D. registration.

9.2 **COMPREHENSIVE EXAMINATION**

- 9.2.1 On the successful completion of the prescribed course work, as evidenced by the grade sheet issued by the Controller of Examinations, the Doctoral Committee shall conduct a Comprehensive (written and oral) Examination for every scholar to test the background knowledge of the scholar in the area of specialization within 6 months from the date on which the results of all the prescribed course work are declared. The Comprehensive Examination shall cover the topics in the specialization and allied areas. The result of the Comprehensive examination and the results of the course works shall be detailed in the minutes of the Doctoral Committee meeting and forwarded to the competent authority, for confirmation of the provisional registration and to proceed further with his/her research work, within two months from the date of the Comprehensive Examination.
- 9.2.2 If the performance of the scholar is not approved by the Doctoral Committee based on the results of Comprehensive Examination, a grace period of three months (within the maximum period of three years) shall be given, at the end of which the scholar shall be re-examined. If found fit, the scholar is provisionally confirmed and is permitted to proceed further with his/her research work. Otherwise, the candidature granted to the scholar shall be cancelled.

10. **RESEARCH OUTSIDE THE UNIVERSITY**

- 10.1 The scholar shall be permitted to carry out his/her research in an institute/project

(relevant to the research area) outside the university for a maximum period of one year only after the confirmation of the registration. Such request, from the scholar shall be approved by the university only if the same has been recommended by the supervisor and forwarded by the Head of the Department of the supervisor.

- 10.2 The scholars shall be permitted to do research outside the university on related fellowship Programs for a period up to one year, with prior approval from the competent authority only after the confirmation of the registration.
- 10.3 The scholars who carry out research outside the university shall submit the Synopsis only after a minimum period of one month on his/her return. The papers published during such period of outside assignment should be relevant to the area of research and should carry the scholar as first author and corresponding author.
- 10.4 The registration of a scholar continuing his/her research outside the university beyond the approved period shall stand cancelled automatically.

11. PROGRESS MONITORING

- 11.1 Commencing from the date of provisional registration till the submission of thesis, all research scholars shall submit the progress report and registration renewal form in the prescribed format duly signed by the Supervisor and Head of the Department of the supervisor and Head of the Department of the part-time Scholar at least three weeks before the end of every semester, without which the scholars shall not be permitted to pay the semester fee.
- 11.2 One seminar presentation shall be made by the scholar before the confirmation of the provisional registration and another presentation prior to the submission of synopsis. Prior information should be passed on to the competent authority for seeking approval. Both seminars shall be open to faculty members and research scholars and should be conducted at the working place of the supervisor.
- 11.3 After the confirmation of provisional registration, the progress made by the research scholars shall be reviewed by the Doctoral Committee once a year.
- 11.4 Full-time research scholars shall sign the attendance register in the Department of the supervisor on all working days and a copy of the same attested by the Head of the Department should be submitted along with the progress report. They are eligible for a total of 15 days leave every semester and a maximum of 30 days in a calendar year, which they shall avail after obtaining permission from the supervisor and Head of the Department. However, those scholars who are availing financial assistance from

a funding agency shall be governed by the rules of the respective agency. The part time scholars should meet their respective supervisors at least once a month.

12. SYNOPSIS SUBMISSION

- 12.1 The scholar shall be permitted to submit the synopsis only after obtaining the confirmation of provisional registration and completion of the minimum duration of the program applicable to the scholar. However, a scholar shall be permitted to submit the synopsis (after obtaining confirmation) three months prior to the completion of his/her minimum duration, provided the scholar has published two research articles (in the journal concerned) in the regular issue of the referred impact factor journals in the field of specialization as first author or second author, based on his/her research work and specifically recommended by the Doctoral Committee. The content of the published paper should be within the scope of the Journal.
- 12.2 The Synopsis shall be accepted only when the scholar has published at least two research-article (in the regular issue of the refereed journal concerned) after joining the program in the field of specialization based on his/her research work as first author or second author or with one patent granted based on his/her research work. The filing date of the patent should be after the date of provisional registration of the Ph.D. program. The content of the published paper should be within the scope of the Journal. The corresponding author shall be either scholar or supervisor or joint supervisor. Publications of the scholars where another PG student is a corresponding author shall not be considered for processing of his/her synopsis. The scholar shall not publish research articles with similar contents in part or full in more than one journal, which would result in self plagiarism. For exceptional cases, the university shall take decisions on a case-by-case basis.
- 12.3 The scholar shall submit the synopsis at the university only if he/she has completed the confirmed registration and possesses one journal publication.
- 12.4 The synopsis shall be accepted at the Centre only if the Doctoral Committee approves that the quality and quantity of research that appears in the final thesis is sufficient for further examination of the thesis.
- 12.5 The scholar shall submit a copy of the Synopsis of his/her research work prepared in accordance with the format and specification prescribed, to the Doctoral Committee through the supervisor and joint supervisor(s) (if applicable) at the time of the Doctoral Committee meeting. At the time of the synopsis approval meeting of the

doctoral committee, the scholar should produce the completed first draft of the thesis.

- 12.6 If the Doctoral Committee approves that the research work reported in the Synopsis fulfils Clause 12.2, the approved Synopsis shall be submitted to the university along with a panel of ten examiners at the level of Associate Professor and above/equivalent scientist grade with minimum five years of post-Ph.D. experience with a good publication record (H index). Out of the ten examiners, at least five examiners should be from institutes of national repute and the remaining five examiners should be from reputed institutions abroad.
- 12.7 Communication in any form with the Thesis examiners by the supervisor/joint supervisor/scholar after the submission of synopsis/thesis of the scholar in connection with the evaluation report shall lead to the withdrawal of the supervisorship for a period of five years and they shall be debarred from guiding the existing scholars in the university till such period.

13. THESIS SUBMISSION

- 13.1 The thesis shall report, in an organized and scholarly fashion, an account of original research work of the 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 contribution to the advancement of knowledge as well as the scholar's ability to undertake sustained research.
- 13.2 The thesis shall be prepared in accordance with the prescribed format and specification. One copy of the thesis in PDF format (to be uploaded) and a hard copy shall be submitted only after the acceptance of synopsis and within three months from the date of approval of the synopsis by the Doctoral Committee along with one hard copy of the abstract of the thesis (in about 400 words). Under extraordinary circumstances, submission of thesis shall be permitted up to a maximum period of six months, with prior approval from the university. In such cases, the late fee shall be paid as applicable.
- 13.3 The thesis shall include a certificate from the scholar, supervisor. and joint supervisor(s) (if applicable) as prescribed, to the effect that the thesis is a record of original research work carried out by the scholar and the work reported in the thesis is not copied from other sources/not submitted elsewhere for a degree or diploma.
- 13.4 The thesis shall be scrutinized to assess the overall layout, contents, and the quality of presentation. The deviations, if any, shall be rectified by the scholar in consultation

with the supervisor and the same shall be approved by the competent authority and three copies of the corrected thesis in hard form and a soft copy of the thesis in a pen drive shall be submitted.

- 13.5 Fees shall be paid by the scholars for every semester during the notified period till the submission of the Thesis. Any other fees as applicable shall be paid, as notified from time to time.

14. THESIS EVALUATION

- 14.1 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 necessary, may also nominate examiners from outside the panel.

- 14.2 The examiner shall include in his/her report an overall assessment placing the thesis in any one of the following categories.

14.2.1 Recommend the acceptance of the thesis in the present form.

14.2.2 Recommend the acceptance of the thesis. However, the scholar shall incorporate the corrections indicated in the detailed report and place the corrected copy to the Oral Examination Board, but the corrected thesis need not be sent to the examiner.

14.2.3 Defer the recommendation at this stage and the scholar shall incorporate the suggested modifications in the thesis and the corrected thesis along with the scholar's clarifications shall be sent to the respective examiner for future evaluation.

14.2.4 Reject the thesis for the reasons set out in the detailed report.

14.2.5 The examiner shall also enclose a detailed report, indicating the standard attained in the case of 14.2.1, the nature of revision in the case of 14.2.2 & 14.2.3 and specific reasons in the case of 14.2.4.

- 14.3 If both the examiners recommended for the award of the degree, thesis shall be provisionally accepted. Any minor revision, modification, etc., suggested by the examiners shall be carried out before the Oral Examination Board.

14.3.1 If any examiner recommends resubmission of the thesis after revision as per Clause 14.2.3, the scholar shall be permitted to revise and resubmit the thesis along with the resubmission fee within a year, failing which the revised thesis shall not be

accepted and his/her registration shall stand cancelled. The revised thesis shall be referred to the same examiner for his/her final recommendation on the thesis which shall be only either for recommendation of the award or for rejection.

14.3.2 If one examiner recommends the award of the degree while the other recommends rejection, then the thesis shall be referred to the third examiner to be nominated by the Vice-Chancellor as in Clause 14.1, in the original form without making any changes based on the comments of the examiners.

14.3.3 If two of the three examiners recommend the award, the thesis shall be provisionally accepted.

14.3.4 If two of the examiners recommend rejection, the thesis shall be rejected, and the registration of the scholar shall stand cancelled.

14.4 In case, the examiner does not insist to send the thesis back to him/her, the thesis shall be referred to the Doctoral Committee to ascertain the corrections carried out in the thesis as suggested by the examiners.

14.5 Individual cases not covered by the above clauses shall be referred to the Vice-Chancellor. If deemed fit, the Vice-Chancellor shall refer to the Research Board which, in turn, shall refer to the Academic Council, for necessary action.

15. ORAL EXAMINATION

15.1 On receipt of the evaluation reports, the Doctoral Committee shall meet **within three months** and recommend a panel of three experts from different recognized institutions (other than the parent institution) within India, for constitution of an Oral Examination Board. The evaluation report of the candidate's thesis shall be submitted along with their publication details in the last five years. No two experts shall be from the same Institution. The Vice-Chancellor shall nominate one member from the panel of experts recommended by the Doctoral Committee. The Vice-Chancellor, if deemed necessary, shall nominate a member from outside the panel.

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

a. Indian Examiner of the thesis or an expert from the panel (in the absence of the former)	Member
b. An expert from a recognized institution from the panel	Member
c. Joint supervisor of the scholar, if applicable	Member
d. Supervisor of the scholar	Convener

- 15.3 The Oral examination shall be conducted **within three months** from the date of issue of oral examination board notification as “Open Defense Type” Examination. The Oral examination should not be conducted on **Saturday/Sunday/public holidays**. The circular for the same shall be communicated to the Competent authority/faculty members/ research scholars/other departments/other Institutions, at least three weeks prior to the Viva – Voce Examination. A minimum of ten members excluding Oral Examination Board members shall be present for the Viva-Voce Examination.
- 15.4 The Oral Examination shall be held at the place of work of the Supervisor or at the place of Joint Supervisor(s) (if the supervisor is from non-recognized centre of the university) or at any recognized centre of the university (if both the supervisor and joint supervisor are from non-recognized centre of the university) with prior approval from the university.
- 15.5 If the Oral Examination Board reports the performance of the scholar as “not satisfactory” then he/she may opt to reappear for the Oral Examination at a later date (not later than three months from the date of the first Oral Examination). On the second occasion, the Oral Examination Board shall include one more expert member nominated by the Vice-Chancellor.
- 15.6 If the performance of the scholar in the Oral Examination in the second occasion is also reported to be “not satisfactory”, the Vice-Chancellor, if deemed necessary, shall refer the remarks of the Oral Examination Board, along with the Thesis and comments of the Examiners, to a committee constituted by the Vice-Chancellor for this purpose and the decision of the Vice-Chancellor shall be final.
- 15.7 On satisfactory completion of the Viva-Voce Examination, the scholar shall submit the soft copy of the corrected thesis in a pen drive, in accordance with the prescribed format and specification, duly certified by the supervisor and joint supervisor (if applicable), that all the corrections have been incorporated in the thesis as suggested by the examiners.

16. AWARD OF Ph.D. DEGREE

If the report of the Oral Examination Board is SATISFACTORY, the scholar shall be awarded the Ph.D. degree based on the specialization in which he/she got admission for the Ph.D. program (as per clause 5), under the School of Engineering/ School of Humanities/ School of Management with the approval of the Academic Council.

17. CANCELLATION OF REGISTRATION

- 17.1 The registration of a scholar who has not submitted his/her thesis before the end of the maximum duration including the extension period for the program shall stand cancelled automatically.
- 17.2 The registration is liable for cancellation administratively by the competent authority, if
- i. The scholar has not paid the semester fees within the stipulated time.
 - ii. Two semesters' progress reports are not submitted or not satisfactory.
 - iii. The scholar fails to complete the confirmation of provisional registration beyond three years from the date of registration for the Ph.D. Program.
 - iv. The performance is not satisfactory to the Doctoral Committee and it is accordingly recommended for cancellation.
 - v. Prior permission is not obtained for break of study from the university.
 - vi. The scholar wishes to withdraw from the program and requests to cancel his/her registration.
 - vii. Extension of time (beyond six years) is not obtained as in Clause 7.
 - viii. Submission of thesis is beyond three months from the date of approval of synopsis by the Doctoral Committee.
 - ix. Submission of revised thesis incorporating the suggestions of any examiner is beyond six months.
 - x. The act of plagiarism is involved in the journal publication/synopsis/thesis.
 - xi. Found communicating with the examiners of the thesis in any form by the scholar/supervisor/joint supervisor (if any)/ HoDs of the supervisor/joint supervisor or the scholar.
 - xii. Non-disclosure of relieving from the present job and taking up new job elsewhere by Scholar/ Supervisor.
 - xiii. Any violation of the rules and regulations of Ph.D. Program.
- 17.3 In all the above cancellation cases, the fees paid by the scholar shall not be refunded.

18. PUBLICATION OF THESIS

Papers arising out of the thesis may be published by the scholar and the supervisor. However, the thesis shall be published by the scholar and supervisor after the award of the degree only with the approval of the university.

19. THE ACT OF PLAGIARISM

- 19.1 In the case of scholars who have committed the act of plagiarism in the synopsis/thesis/journal publication, he/she shall be called for enquiry at the university and shall be advised to rectify the plagiarism and resubmit the documents with appropriate penalty. If the scholar fails to rectify the plagiarism in the documents, the thesis/degree shall be forfeited, and his/her research registration shall be cancelled and also he/she shall be debarred to register for any other program in the university.
- 19.2 For the abetment of above such action, the recognition of his/her Supervisor shall be withdrawn for a period of five years, and he/she shall be debarred from guiding the scholars for any research program in the university during this period.
- 19.3 If any scholar has committed an act of self-plagiarism in the publications and it is ascertained by the Committee constituted by the Vice-Chancellor, such work shall not be allowed in his/her thesis and the scholar shall be fined upto Rs.50000/- with a warning to the supervisor. The synopsis/thesis of such scholar shall be accepted only based on a new publication in a referred journal (as applicable). If plagiarism is detected in the publications/thesis of any other scholar under the same supervisor, the recognition of his/her supervisorship shall be withdrawn for a period of five years and he/she shall be debarred from guiding the scholars for any research program in the university during this period.
- 19.4 If plagiarism is observed at the later stage, at any point of time, the Ph.D. degree awarded to the scholar shall be withdrawn.

20. 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 only with a valid reason for the betterment of the reputation of the university.

Note: The scholar shall be governed by the regulations as in force, from time to time. The supervisors and scholars are requested to visit the university website

21. RESEARCH ETHICS

- 21.1 All individuals conducting research in connection with the university should incorporate appropriate consideration of ethical issues into the design and management of projects.
- 21.2 Research involving interaction with environmental issues, human subjects or communities should be informed by context specific ethical practice. Scholars must respect the human rights and dignities of all those involved in any inquiry project and must appropriately address questions of consent, power relations, deception, confidentiality, and privacy. Scholars must address a range of complex issues around developing and maintaining respectful and ethical relationships with research partners based on mutual respect for academic traditions and institutional circumstances. Information and/or complaints regarding the above issues, shall be referred to the committee constituted by the Vice-Chancellor for necessary action.
- 21.3 At the time of admission, each scholar must give an undertaking that he/she shall abide by the regulations.

22. MISCONDUCT IN RESEARCH

- 22.1 Falsification, fabrication, or dishonesty in creating or reporting laboratory results, research results, and/or any other assignments; sexual harassment of other scholars; contacting the examiner about thesis evaluation are considered to be misconduct.
- 22.2 Submitting plagiarized work for an academic requirement. Plagiarism means representation of another's work or ideas as one's own; it includes the unacknowledged word-for-word use and/or paraphrasing of another person's work, and/or the inappropriate unacknowledged use of another person's ideas.
- 22.3 Submitting substantially the same work to satisfy requirements for one course or academic requirement that has been submitted in satisfaction of requirements for another course or academic requirement without the permission of the instructor of the course for which the work is being submitted or supervising authority for the academic requirement.
- 22.4 All complaints related to research activities or any matters relating to differences among scholars or complaints about the supervisor or seeking of any information

related to research shall be addressed to the competent authority. Only in the absence of any response, alternate measures shall be sought.

22.5 The registration of any scholar exhibiting misconduct will be cancelled. Such a scholar will not be eligible for readmission to any of the courses of this university. Further, if such scholar receives any fellowship from the university, it will be withdrawn and the fellowship has to be refunded from the date of the last award. The Vice-Chancellor shall be the ultimate authority in imposing disciplinary actions against the scholars for acts of prohibited behaviour.

22.6 Right to Appeal

22.6.1 The scholar/scholars aggrieved by the action of any authority of the university can appeal to the competent authority through the Chairperson/Head of the Department and any scholar aggrieved by the action of the Chairperson/Head of the Department, Centre for Research can appeal to the Registrar and then to the Vice-Chancellor. The decision of the Vice-Chancellor shall be final and binding on the scholars.

22.6.2 The scholar may seek legal remedy about any matter with prior notice, and only after their representations to the higher authorities have been negative.

22.7 If supervisors are found to indulge in any of following acts, based on the severity of the complaint, the supervisorship will be cancelled for a specific duration and disciplinary action will be taken.

- i. Exploiting the services of the scholar for completing the academic tasks assigned to an individual.
- ii. Any act of financial extortion or forceful expenditure burden put on the scholar.
- iii. Any act of sexual abuse or abuse by spoken words, phone calls, short message service (SMS) through mobile, emails, posts, public insult leading to discomfort to the scholar.

22.8 For Supervisors under suspension/undergoing any disciplinary proceedings of the university, supervisor-in-charge should be nominated by the competent authority based on the request of the supervisor and/or the recommendation of the Head of the Department of the supervisor. The supervisor-in-charge shall function up to one year or till the supervisor resumes duty. However, if the supervisor continues under suspension/ undergoing any disciplinary proceedings of the university for more than one year, an alternate supervisor shall be nominated by the competent authority

based on the request of the supervisor-in-charge and the recommendation of the Head of the Department.

ANNEXURE I: GUIDELINES FOR THE PREPARATION OF SYNOPSIS

Synopsis should outline the research problem, the methodology used for tackling it and the summary of the findings. **The size of Synopsis should not exceed 15 pages of typed matter reckoned from the first page to the last page including the List of Publications.** The sequence in which the synopsis should be arranged is as follows with References and List of Publications in separate pages:

1. Cover Page and Title page (as shown in the Annexure I)
2. Text divided into suitable Headings (numbered consecutively)
3. References (not more than 15) (Alphabetical order)
4. List of Publications (those published/accepted for publication in Journals. Mention Impact Factor of the Journal.)

Standard A4 size (297mm x 210mm) bond paper may be used for preparing the copies. The Synopsis should have the following page margins:

Top edge	:	30 to 35 mm
Bottom edge	:	25 to 30 mm
Left side	:	35 to 40 mm
Right side	:	20 to 25 mm

The Synopsis should be prepared on good quality white paper preferably not lower than 80GSM. One and a half line spacing should be used for typing the general text. The general text shall be typed in font style "Times New Roman" and font size 12. One or two tables/figures may be included at appropriate places in the text and they should conform to the margin specifications. All page numbers (Arabic numbers) should be typed without punctuation on the upper right-hand corner 20 mm from the top with the last digit in line with the right-hand margin.

Synopsis should be bound with black calico cloth and using flexible cover of thick white art paper. The cover should be printed in black letters and the text for printing should be identical to what has been prescribed for the title page.

Provision should be made for submission of the soft copy for onward transmission.

ANNEXURE II: SYNOPSIS FORMAT

A typical Specimen of Cover Page and Title Page

VIBRATION AND THERMAL ANALYSIS OF 6/4 POLE SWITCHED RELUCTANCE MOTOR

 <1.5 line spacing>

A SYNOPSIS

Submitted by

 <Italic>

PRIYA RAJAGOPAL S M

in partial fulfillment of the requirements for the degree of

 <Italic> <1.5 line spacing>

DOCTOR OF PHILOSOPHY

SCHOOL OF ENGINEERING



Shiv Nadar University

Chennai 603 110

<1.5 line spacing>

JANUARY 2022

**VIBRATION AND THERMAL
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ANNEXURE III: GUIDELINES FOR THE PREPARATION OF THESIS

The scholars are expected to read carefully the guidelines given in the sequel and meticulously follow them in the preparation of the thesis. Non-compliance with any of these instructions may lead to the rejection of the thesis submitted.

1 GENERAL

The manual is intended to provide broad guidelines to the research scholars in the preparation of the thesis. In general, 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.). The thesis shall demonstrate 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.

2 SIZE OF THESIS

The size of the thesis shall normally be between 100 and 300 pages of typed matter reckoned from the first page of Chapter 1 to the last page of the thesis excluding reference section.

3 ARRANGEMENT OF THE CONTENTS OF THE THESIS

The sequence in which the thesis material should be arranged and bound is as follows:

1. Cover Page and Title page (as shown in Annexure II)
2. Certificate (as shown in Annexure III)
3. Abstract
4. Acknowledgement (one page only)
5. Table of Contents (as shown in Annexure IV)
6. List of Tables
7. List of Figures
8. List of Symbols and Abbreviations (as shown in Annexure V)
9. Chapters

10. Appendices
11. References (Alphabetical order)
12. List of Publications

The tables and figures should be included subsequently after referring them in the text of the thesis. **The thesis, from the chapters onwards, should be printed on both sides.**

4 PAGE DIMENSIONS AND MARGIN

Standard A4 Size (297 mm x 210 mm) bond paper may be used for preparing the copies. The dimensions of the final bound thesis (3 copies) report should be 290 mm x 205 mm.

The final thesis (at the time of submission) should have the following page margins:

Top edge: 30 to 35 mm

Bottom edge: 25 to 30 mm

Left side: 35 to 40 mm

Right side: 20 to 25 mm

The Thesis should be prepared on good quality white paper, preferably not lower than 80GSM. Tables and figures should conform to the margin specifications. Large size Figures should be photographically or otherwise reduced to the appropriate size before insertion.

5 MANUSCRIPT PREPARATION

In the preparation of the manuscript, care should be taken to ensure that all textual matter is type written to the extent possible in the same format as may be required for the final Thesis. Hence some of the information required for the final typing of the Thesis is also included in this section.

The headings of all items from 2 to 12 listed in section 3 should be typed in capital letters without punctuation and centered 50 mm below the top of the page. The text should commence 4 spaces below this heading. The page numbering for all items from 1 to 8 should be done using lower case Roman numerals and the pages thereafter should be numbered using Arabic numerals.

- 5.1 Cover Page & Title Page** - A specimen copy of the Cover page and Title page for the Thesis is given in Annexure IV.

- 5.2 Certificate** - The Certificate shall be typed in double line spacing using font style “Times New Roman” and font size 12 as per the format shown in Annexure IV. The certificate shall carry the supervisor’s signature and shall be followed by the Supervisor’s name, academic designation (not any other responsibilities of administrative nature), department and full address of the institution where the Supervisor has guided the research scholar. The term ‘SUPERVISOR’ must be typed in capital letters between the Supervisor’s name and academic designation. Signature of the Joint Supervisor with the details specified as above should be included wherever it is applicable.
- 5.3 Abstract** - Abstract should be an essay type of narration not exceeding four pages outlining the research problem, methodology used for tackling it and a summary of the findings. This shall be typed in one and a half line spacing using font style “Times New Roman” and font size 13.
- 5.4 Acknowledgement** – It should be brief and should not exceed one page when typed in one and a half line spacing. The scholar’s signature shall be at the bottom right end above his/her name typed in capitals.
- 5.5 Table of Contents** - The Table of contents should list all captions following it as well as any caption which precedes it. The title page, certificate and acknowledgment will not find a place among the items listed in the Table of Contents but the page numbers of which are in lower case Roman letters. One and a half line spacing should be adopted for typing the matter under this head. A specimen copy of the Table of Contents for the thesis is given in Annexure IV.
- 5.6 List of Table** - The list should use the same captions as they appear above the Tables in the text. One and a half line spacing should be adopted for typing the matter under this head.
- 5.7 List of Figures** - The list should use the same captions as they appear below the figures in the text. One and a half line spacing should be adopted for typing the matter under this head.
- 5.8 List of Symbols and Abbreviations** - One and a half line spacing should be adopted for typing the matter under this head. Standard symbols, abbreviations, etc. should be used. **The list should be arranged alphabetically with respect to the contents on the right side as shown in Annexure V.**
- 5.9 Chapters** - The chapters may be broadly divided into 3 parts (i) Introductory chapter,

(ii) Chapters developing the main theme of the thesis and (iii) Results, Discussion and Conclusion. The main text shall be divided into several chapters and each chapter may be further divided into several divisions and sub-divisions.

- Each chapter should be given an appropriate title.
- Tables and Figures in a chapter should be placed in the immediate vicinity of the reference where they are cited.
- Footnotes should be used sparingly. They should be typed in single space and placed directly underneath, on the very same page that refers to the material they annotate.

5.10 Appendices - Appendices are provided to give supplementary information, which if included in the main text may serve as a distraction and cloud the central theme under discussion.

- Appendices should be numbered using Arabic numerals, e.g. Appendix 1, Appendix 2, etc.
- Appendices, tables, and references appearing in appendices should be numbered and referred to at appropriate places just as in the case of chapters.
- Appendices shall carry the title of the work reported and the same title shall be included in the Table of Contents page.

5.11 List of References - Any works of other researchers, if used either directly or indirectly, the origin of the material thus referred to at appropriate places in the thesis should be indicated. The author's publications during the period of research should not be included in the references and can be separately mentioned as in 5.10. A paper, a monograph or a book may be designated by the name of the first author followed by the year of publication, placed inside brackets at the appropriate places in the thesis. The citation may assume any one of the following forms.

How to cite

- The structure of a citation is the author's surname and year of publication.
- Single author is cited as "Jones (2001)".
- Two authors are cited using "&" (Deane & Jones 1991) or Smith *et. al.* (1992)

- More than two authors are cited using “*et. al.*” (Smith *et al.* 1992) or Smith *et. al.* (1992).
- In case the information being discussed has been written in several different sources then cite them all in one set of brackets in chronological order of publication (Midgley 1994; Smith 1994; Philip 2002).
- If an author published several papers in 2005, the year of the first publication (in the alphabetic order of the references) is cited and referenced as 2005a, the second as 2005b and so on.
- A citation is placed wherever appropriate in or after the sentence. If it is at the end of a sentence, it is placed before the full stop.
- Complete citations and source shall be provided in alphabetical order in the reference section.
- All citations shall be in the same font as the main text.
- All figures and charts etc., taken from other sources shall be cited beneath within brackets, author name, source followed by, year in Times New Roman, normal, font-size: 11 points, as “(Source: Jones, *et al.* 2001)”. If it is sourced from web pages the citation style shall be as “(Source: www.abc.com)” and the complete URL shall be given in the reference section.

Examples of Citation

- (i) An improved algorithm has been adopted in the literature (Waldron 2008).
- (ii) Conley & Galeson (1998) have dealt with this principle, at length.
- (iii) The problem of mechanical manipulators has been studied by Alishahi et al. (2009)

The listing should be typed 4 spaces below the heading “REFERENCES” in single spacing. The reference material should be listed in the alphabetical order of the first author. The name of the author/authors should be immediately followed by the other details and year. A typical illustrative list given below relates to the citation example quoted above.

REFERENCES

1 **Journal Article: with Single Author**

Waldron, S 2008, 'Generalized Welch bound equality sequences are tight frames', *IEEE Transactions on Information Theory*, vol. 49, no. 9, pp. 2307-2309.

2 **Journal Article : with Two Authors**

Conley, TG & Galeson, DW 1998, 'Nativity and wealth in mid-nineteenth century cities', *Journal of Economic History*, vol. 58, no. 2, pp. 468-493.

3 **Journal Article : with more than two Authors**

Alishahi, K, Marvasti, F, Aref, VA & Pad, P 2009, 'Bounds on the sum capacity of synchronous binary CDMA channels', *Journal of Chemical Education*, vol. 55, no. 8, pp. 3577-3593.

4 **Book**

Holt, DH 1997, *Management Principles and Practices*, Prentice-Hall, Sydney.

5 **E-book**

Aghion, P & Durlauf, S (eds.) 2005, *Handbook of Economic Growth*, Elsevier, Amsterdam. Available from: Elsevier books. [4 November 2004].

6 **Conference Proceeding Paper with editors**

Riley, D 1992, 'Industrial relations in Australian education', in *Contemporary Australasian industrial relations: proceedings of the sixth AIRAANZ conference*, ed. D. Blackmur, AIRAANZ, Sydney, pp. 124-140.

7 **Conference Proceeding Paper without editors**

Fan, W, Gordon, MD & Pathak, R 2000, 'Personalization of search engine services for effective retrieval and knowledge management', *Proceedings of the twenty-first international conference on information systems*, pp. 20-34.

8 **Website**

Australian Securities Exchange 2009, Market Information. Available from: <http://www.asx.com.au/professionals/market_information/index.htm>. [5 July 2009].

9 **Patent**

Cookson, AH 1985, Particle trap for compressed gas insulated transmission systems, US Patent 4554399.

10 **Thesis: Unpublished**

Hos, JP 2005, Mechanochemically synthesized nanomaterials for intermediate temperature solid oxide fuel cell membranes. Ph.D. thesis, University of Western Australia.

11 **Newspaper: Print**

Ionesco, J 2001, 'Federal election: new Chip in politics', *The Advertiser* 23 October, p. 10.

5.12 List of Publications - The list of publications (those already published/accepted for publication in Journals and papers presented in Conferences/Symposia) made by the research scholar during the period of research shall be reported in the Table of Contents. Mention Impact Factor of the Journal (if applicable).

5.13 Tables and Figures – “Table” means tabulated numerical data in the body of the thesis as well as in the appendices. All other non-verbal material used in the body of the thesis and appendices such as charts, graphs, maps, photographs and diagrams may be designated as figures.

- A table or figure including caption should be accommodated within the prescribed margin limits and appear on the page following the page where their first reference is made.
- Tables and figures on half page or less in length may appear on the same page along with the text. However, they should be separated from the text both above and below by triple spacing.
- All tables and figures should be prepared on the same paper or material used for the preparation of the rest of the thesis.
- Two or more small tables or figures may be grouped if necessary in a single page.
- Wherever possible, the photograph(s) shall be reproduced on a full sheet of photographic paper or standard A4 size paper.
- More than one photograph can be included in a page.
- Samples of fabric, leather, etc., if absolutely necessary may be attached evenly in a page and fixed/pasted suitably and should be treated as figures.

6 TYPING INSTRUCTIONS

6.1 General

This section includes additional information for final typing of the thesis. The impressions on the typed/printed copies should be black in colour.

A sub-heading at the bottom of a page must have at least two full lines below it or else it should be carried over to the next page.

The last word of any page should not be split using a hyphen. One and a half line spacing should be used for typing the general text. The general text shall be typed in

Font Style Times New Roman and Font Size 13. Single spacing should be used for typing:

- (i) Long Tables
- (ii) Long quotations
- (iii) Foot notes
- (iv) Multiline captions
- (v) References

All quotations exceeding one line should be typed in an indented space - the indentation being 15 mm from either side of the margin.

6.2 Chapters

The format for typing chapter headings, division headings, and sub-division headings are explained by the following illustrative examples.

Chapter heading	:	CHAPTER 1
		INTRODUCTION
Division heading	:	1.1 OUTLINE OF THESIS
Sub-division heading	:	1.1.1 Literature Review
		1.1.1.1 Synthetic aperture radars on satellites

The word CHAPTER without punctuation should be centered 50 mm down from the top of the page. Two spaces below, the title of the chapter should be typed centrally in capital letters. The text should commence 4 spaces below this title, the first letter of the text starting 20 mm inside from the left hand margin.

The division and sub-division captions along with their numberings should be left justified. The typed material directly below division or sub-division heading should commence 2 spaces below it and should be offset 20 mm from the left hand margin. Within a division or sub-division, paragraphs are permitted. Even paragraph should commence 3 spaces below the last line of the preceding paragraph, the first letter in the paragraph being offset from the left-hand margin by 20 mm.

7 NUMBERING INSTRUCTIONS

7.1 Page Numbering

All page numbers (whether it be in Roman or Arabic numbers) should be typed without punctuation on the upper right-hand corner 20 mm from the top with the last

digit in line with the right hand margin. The preliminary pages of the Thesis (such as Title page, Acknowledgement, Table of Contents, etc.) should be numbered in lower case Roman numerals. The title page will be numbered as (i) but this should not be typed. The page immediately following the title page shall be numbered as (ii) and it should appear at the top right hand corner as already specified. Pages of main text, starting with Chapter 1 should be consecutively numbered using Arabic numerals.

7.2 Numbering of Chapters, Divisions and Sub-Divisions

The numbering of chapters, divisions and sub-divisions should be done using Arabic numerals only and further decimal notation should be used for numbering the divisions and sub-divisions within a chapter. For example, sub-division 4 under division 3 belonging to chapter 2 should be numbered as 2.3.4. The caption for the sub-division should immediately follow the number assigned to it.

Every chapter beginning with the first chapter should be serially numbered using Arabic numerals. Appendices, included if any, should also be numbered in an identical manner starting with Appendix 1.

7.3 Numbering of Tables and Figures

Tables and figures appearing anywhere in the thesis should bear appropriate numbers. The rule for assigning such numbers is illustrated by an example. Thus, if a figure in chapter 3, happens to be the fourth then assign 3.4 to that Figure.

Identical rules apply for Tables except that the word figure is replaced by the word table. If figures (or tables) appear in appendices, then figure 3 in appendix 2 will be designated as figure A 2.3. If a table to be continued into the next page this may be done, with unfinished table, continued into the next page, with title Table 2.1 (continued) placed centrally.

7.4 Numbering of Equations

Equations appearing in each chapter or appendix should be numbered serially, the numbering should commence afresh for each chapter or appendix. Thus, for example, an equation appearing in chapter 4, if it happens to be the eighth equation in that Chapter should be numbered as (4.8) thus:

$$\left[\frac{\partial}{\partial x} \left[\frac{p^2}{h} \right] + \frac{\partial}{\partial y} \left[\frac{pq}{h} \right] = -gh \frac{\partial \eta}{\partial x} - k \frac{\sqrt{p^2 + q^2}}{h^2} p + \frac{1}{\rho_w} \left[\frac{\partial}{\partial x} (h \tau_{xx}) + \frac{\partial}{\partial y} (h \tau_{xy}) \right] \right] \quad (4.8)$$

While referring to this equation in the body of the thesis it should be referred to as Equation (4.8).

8 BINDING SPECIFICATIONS

- Thesis (3 copies) side pinning/stitching, covered with wrapper printed on 300 gsm white art card and outer side gloss laminated, adhesive binding. The cover should be printed in black letters and the text for printing should be identical to what has been prescribed for the title page.

9 ONLINE SUBMISSION OF THESIS

- After viva-voce examination the final version of the thesis needs to be prepared by incorporating all corrections suggested by the examiners and the same shall be uploaded through the scholar login available in the web page of the Centre for Research.
- The final version of the thesis copy should contain a certificate given in Annexure VI and a scanned copy of the minutes of the oral examination board. These two items should be placed in between the title page and certificate.

ANNEXURE IV: THESIS FORMAT

A typical Specimen of Cover Page and Title Page

**VIBRATION AND THERMAL
ANALYSIS OF 6/4 POLE
SWITCHED RELUCTANCE
MOTOR**

 <1.5 line spacing>

A THESIS

Submitted by

 <Italic>

PRIYA RAJAGOPAL S M

in partial fulfillment of the requirements for the degree of

 <Italic> <1.5 line spacing>

DOCTOR OF PHILOSOPHY

SCHOOL OF ENGINEERING



Shiv Nadar University

Chennai 603 110

JANUARY 2022

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A typical Specimen of Certificate

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BONAFIDE CERTIFICATE

The research work embodied in the present Thesis entitled “**VIBRATION AND THERMAL ANALYSIS OF 6/4 POLE SWITCHED RELUCTANCE MOTOR**” has been carried out in the

<<Name of the Supervisor's Department>>, <<Name of the College>>,<<Place>>. The work reported herein is original and does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion or to any other scholar.

I understand the 's policy on plagiarism and declare that the thesis and publications are my own work, except where specifically acknowledged and has not been copied from other sources or been previously submitted for award or assessment.

<<Signature of the Scholar>>

<<Name>> Counter

signed by

<<Signature of the Joint Supervisor>>

<<Signature of the Supervisor>>

<<Name>>

<<Name>>

JOINT SUPERVISOR (If applicable)

SUPERVISOR

<<Designation & Address >>

<<Designation & Address >>

A typical Specimen of Table of Contents

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LIST OF SYMBOLS AND ABBREVIATIONS

ω	-	Absolute frequency
HOA	-	Acetic acid
Al	-	Aluminum
ASTM	-	American standard testing mesh
CaCO_3	-	Calcium carbonate
CIA	-	Chemical index of alteration
ρ	-	Density of the fluid
θ	-	Direction of wave propagation
EF	-	Enrichment factor
ω_p	-	Frequency of the peak
Ω	-	Frequency of the waves
FP	-	First percentile
γ	-	Gamma
g	-	Gram
HCl	-	Hydrochloric acid
Fe_2O_3	-	Iron oxide
MgO	-	Magnesium oxide
θ_m	-	Mean wave direction
mg	-	Milligram
HNO_3	-	Nitric acid
OC	-	Organic carbon
ppm	-	Parts per million
$\text{K}_2\text{Cr}_2\text{O}_7$	-	Potassium dichromate
φ	-	Potential function
SEM	-	Scanning electron microscope
Ag_2SO_4	-	Silver sulphate
τ	-	Time lag between samples
ζ	-	Vertical displacement

CERTIFICATE

1. This is to certify that no corrections/suggestions were pointed out by the Indian / Foreign Examiner(s) in the Thesis titled “.....” submitted by Mr./Ms.....

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