

NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA

PROSPECTUS



Ph.D. PROGRAMS

(2013-2014)

NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA

The National Institute of Technology, Kurukshetra, an “Institute of National Importance”, offers through its departments, postgraduate programs leading to the award of the degree of M.Tech, and Ph.D.

The Institute undertakes sponsored research and development projects from various industrial and other organizations in public and private sectors. The Institute encourages research in inter-disciplinary areas also, and provides opportunities for such research programs.

The National Institute of Technology, Kurukshetra (NITK), formerly a Regional Engineering College, was conferred the deemed university status on 26.6.2002, and declared an “Institute of National Importance”, on 15.08.2007. The Institute is now fully and directly funded by Central Government through the Ministry of Human Resource Development.

Kurukshetra, located on Delhi –Ambala section of Northern Railway at about 160 km from Delhi, is one of the premier Institutes engaged in technical education and research. It is the first Engineering Institute in the state of Haryana.

Kurukshetra is a place of great religious significance too, where Lord Krishna is said to have delivered the divine message of Shrimad Bhagwad Gita.

Fees & Deposits

The rates of fee payable by Ph.D. scholars are as under

- | | | |
|-----|---|----------------------------------|
| (a) | Full-time scholars | Rs. 6000/- per semester |
| (b) | Part-time scholars from outside NITK | |
| | (i) Teachers | Rs. 4000/- per semester |
| | (ii) Non-teachers | Rs. 4000/- per semester |
| (c) | Part-time scholars from NITK | |
| | (i) First Semester | Rs. 1000/- |
| | (ii) Subsequent Semesters | Rs. 500/- per semester |
| (d) | NRIs/ Foreigner students | US \$ 2000/- per semester |

Hostel

For staying in the hostel (subject to availability of seats), the room rent, fee and deposits etc. shall be charged as per the hostel rules applicable from time to time.

Specializations available for Ph.D. programs

The Ph.D. programs are offered by the following departments / Schools in the related areas of specializations. The research in interdisciplinary areas is encouraged.

- DEPARTMENT OF CIVIL ENGINEERING
- DEPARTMENT OF ELECTRICAL ENGINEERING
- DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
- DEPARTMENT OF COMPUTER ENGINEERING***
- DEPARTMENT OF MECHANICAL ENGINEERING *
- DEPARTMENT OF PHYSICS
- DEPARTMENT OF CHEMISTRY
- DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES
- DEPARTMENT OF MATHEMATICS
- SCHOOL OF VLSI DESIGN AND EMBEDDED SYSTEMS
- SCHOOL OF RENEWABLE ENERGY AND EFFICIENCY
- DEPARTMENT OF BUSINESS ADMINISTRATION**
- DEPARTMENT OF COMPUTER APPLICATIONS**

* Includes Production and Industrial Engineering.

** Subject to availability of permanent staff

*** Includes Information Technology

Contacts:

The department-wise availability of tentative number of seats will be notified on the institute website by the academic section in the beginning of May/November every year. The contact numbers of the offices of Dean (Academics) and Heads of Departments are as listed below:

Office of Dean (Academics)			
Telephone No.			
(EPABX: 01744-233100, 233200			
FAX NO.: 01744-238050			
Designation	Name	Deptt. Office	Office
Dean (Academics)	Prof. A. K. Gupta	233415	233223
Prof-in-charge (Academic & Senate Affairs)	Prof. L.M. Saini	233381	233223
D. R.(Academics)	-	233227	-
Academic Section	-	233228 233229	-

Heads/ Coordinators of Departments			
Department/ School	Name	Deptt. Office	Office
Civil Engg. Deptt.	Prof. D.K. Soni	233334	233338
Computer Engg. Deptt.	Dr. J.K. Chhabra	233479	233482
Electrical Engg. Deptt.	Prof. Lillie Dewan	233371	233379
Electronics & Communication Engg. Deptt.	Dr. Umesh Ghanekar	233414	233417
Mechanical Engg. Deptt.	Prof. Sudhir Kumar	233447	233453
Physics Deptt.	Prof. J K Quamara	233494	233497
Chemistry Deptt.	Prof. Minati Baral	233514	233544
Humanities & Social Sciences Deptt.	Prof. Rajender Kumar	233516	233523
Mathematics Deptt.	Dr. Paras Ram	233504	233509
School of VLSI design and embedded system	Prof. A. K. Gupta	233415	233223
School of renewable energy and efficiency	Prof. A. Swarup	233375	233221

Submission of Application

The applications for Ph.D., addressed to the Director NIT Kurukshetra, can be submitted from 1st May to 31st May, and from 1st November to 30th November in the prescribed application form (may be downloaded from the institute website).

**NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA**

ORDINANCES & REGULATIONS

for the

DEGREE OF DOCTOR OF PHILOSOPHY

PREAMBLE

The National Institute of Technology, Kurukshetra offers through its Departments, postgraduate programs leading to the award of the Doctorate (Ph.D.) degree. The award of the Doctorate degree is in recognition of high academic attainments, quality research, and application of knowledge to the solution of technical and scientific problems in Science, Technology, and Humanities & Social Sciences.

The Institute undertakes sponsored research and development projects from industry and other organizations in public and private sector. The Institute also provides opportunities for research in inter-disciplinary areas through a system of co-supervision.

The research work is required to be an original work characterized either by the discovery of facts, or by a fresh approach towards the interpretation and application of facts, or development of equipment, making a significant and distinct advance in technology. It shall evince the scholar's capacity for critical examination and sound judgment and shall represent original contribution to the existing knowledge.

ORDINANCES

Note: 'He' & 'His' imply 'he' / 'she' and 'his'/'her' respectively in the whole of this document.

1. DEFINITIONS

- (i) **"NITK"** shall mean the National Institute of Technology, Kurukshetra.
- (ii) **"Research Scholar"** shall mean a person who is registered for the Ph.D. program in a department of NITK.
- (iii) **"Part-time Research Scholar"** shall mean a research scholar who in addition to devoting his time towards discharging his employment responsibilities also devotes his time towards the pursuit of his Ph.D. research program.
- (iv) **"Full-time Research Scholar"** shall mean a research scholar devoting full time in a Department / School at NITK towards the pursuit of his Ph.D. research program.
- (v) **"Supervisor"** shall mean a member of the academic staff of the NITK, appointed by the concerned Department Research Committee (DRC) to guide/supervise the Ph.D. research/ academic work of the scholar.

- (vi) **“Co-Supervisor”** shall mean additional supervisor as appointed by the DRC. The Co-supervisor(s) may be from NITK itself, or from any other reputed government laboratory / reputed research organization / reputed Institutes or Universities or industries. A Co-supervisor must have the academic and research qualifications as prescribed for a supervisor.
- (vii) **“Caretaker Supervisor”** shall mean a supervisor appointed to look after the scholar’s research interests in the absence of the regular supervisor when the synopsis of the thesis has been submitted. The caretaker supervisor also must have the academic and research qualifications as prescribed for a supervisor.
- (viii) **“Educational Institute”** shall mean those institutes/colleges which run full-time Bachelor’s or higher degree programs.
- (ix) **“ORG”** shall mean a PSU / Government Department / R&D Unit.
- (x) **“Registration Period”** shall mean the length of the time span for which a person remains a research scholar.
- (xi) **“Minimum Registration Period”** shall mean the minimum period for which a scholar must remain registered to complete the requirements for the degree of Ph.D.
- (xii) **“Degree”** shall mean the Degree of Doctor of Philosophy (Ph.D.) of NITK.
- (xiii) **“Dean”** shall mean the Dean (Academics) of NITK.
- (xiv) **“HOD”** shall mean Head of Department in which Research Scholar is registered/proposes to register.
- (xv) **“DRC”** shall mean the Department Research Committee of a Deptt. of NITK.
- (xvi) **“BOS”** shall mean the Board of Studies of a Department of NITK.
- (xvii) **“RAC”** shall mean Research Advisory Committee of the research scholar.

2. GENERAL

1. This ordinance / Ph. D. regulations shall be applicable to students taking admission in Ph. D. programs at NITK from academic session 2013-14 onwards.
2. All eligibility criteria must be satisfied on the last date of receipt of application, failing which application will be rejected. In case the result of qualifying degree is not declared by the concerned university at the time of submission of application (for admission in odd semester), the candidate may be considered for provisional admission. However, in such a case, the candidate must submit the proof of having completed the qualifying degree latest by September 15th (if recommended for admission), failing which the admission shall stand cancelled.
3. The qualifying degree as well as University of qualifying degree must be recognized by AICTE and / UGC, as the case may be. This will be verified by the Academic Section of NITK and its decision in this regard will be final.

4. The applicant, if employed, must send his application through the competent authority / proper channel.
5. The date of initial registration of a scholar shall normally be the date on which the scholar formally registers and deposits the fees for the first time for the Ph.D. program; which shall also be the date of joining the program for all intents and purposes.
6. In case of change of status from full-time to part-time, the time spent as a full-time scholar will be taken into account for the purpose of minimum registration period requirement. For change of status from full time to part time, the scholar must have completed a minimum of two years as full time scholar at the institute.
7. If a scholar withdraws from Ph.D. program or the registration is terminated due to any reason, the research scholar status ceases w.e.f. the date of such act.
8. Once de-registered from the Ph.D. program, the scholar cannot apply again for registration before the lapse of one year from the date of de-registration.
9. At the close of every semester, a scholar is required to submit semester progress report by 30th June for even semester and 31st December for odd Semester to the Chairman of the DRC. Semester progress report is to be submitted through research supervisor(s) with remarks of all the supervisor(s) duly recorded as Satisfactory/unsatisfactory by each supervisor. The progress shall be evaluated by the DRC and the result of evaluation recorded as satisfactory/unsatisfactory on the registration form of the scholar for the subsequent semester. The registration form shall be forwarded by the Chairman, DRC to the Dean (Academics).
10. The scholar should be present in the Department when a DRC meeting is held for evaluating the comprehensive examination / presentation.
11. If due to compelling adverse circumstances (as considered so by the DRC), a scholar is not able to submit the progress report by the stipulated date, or the progress of a scholar is adjudged by the DRC as unsatisfactory, the Research Scholar on his request, can be allowed an additional chance for the same. He is expected to improve his work and submit the report again at the close of the following semester (after six months). During this semester, he can be registered provisionally only (the normal semester fees, however, will have to be paid), and the minimum registration period requirement will automatically get extended by six months. Further, if he receives scholarship, his scholarship for these six months will be stopped.

If, even on having been granted extension, he does not submit the progress report within the stipulated time or on resubmission also, the progress is adjudged as unsatisfactory; his registration shall stand automatically cancelled. Only one such chance can be allowed to a scholar during his entire Ph.D. program.
12. A scholar must submit his research plan proposal and pass the comprehensive examination within 12-18 months of the initial registration.
13. If due to compelling adverse circumstances (as considered so by the DRC), a scholar is not able to submit his research plan proposal and appear in the comprehensive examination as stipulated above, or he is not able to pass the

comprehensive examination within 12-18 months period, he, on his request, can be granted an extension of six months. During this semester, he can be registered provisionally only (the normal semester fees, however, will have to be paid), and minimum registration period requirement will automatically get extended by six months. Further, if he receives scholarship, his scholarship for these six months will be stopped. Only one such chance can be allowed to a scholar. If the research scholar fails to qualify the comprehensive examination after getting extension of six months his registration will be cancelled.

14. The scholar must inform the HOD well in time (at least fifteen days before the expiry of expected date), through his supervisor(s), about his plans to appear in the comprehensive examination, to deliver pre-synopsis seminar, or to submit the synopsis or the thesis - all as per regulations.
15. The scholar shall be allowed to deliver his pre-synopsis seminar only after completing the course requirements and after publishing/getting acceptance for at least two research papers out of his research work in non-paid SCI journals **OR** such other reputed and peer reviewed journals as are recommended by the concerned DRC and approved by the Director.
16. A research scholar is required to complete all the requirements for the award of the Ph.D. degree within the specified period as per the regulations failing which he will be de-registered.
17. Every research scholar is to abide by all the regulations and the amendments made in regulations from time to time. However the eligibility conditions for submission of thesis shall remain same as existed at the time of admission.
18. It is the responsibility of the research scholar himself to be in the knowledge of the amendments (if any) in the ordinances and the regulations. No scholar will be informed individually. The related circulars/amendments would be available in the office of the HOD / Dean. The amendments are incorporated in the prospectus and the amended version is put on the Institute website also. He should maintain frequent contact with the supervisor for the purpose.
19. No TA/DA etc is admissible to any research scholar whenever he is to visit NITK, or any other place in connection with the Ph.D. research work.
20. In case of a change in the contact telephone number / the correspondence address/e-mail, the scholar must immediately inform his supervisor, the HOD and the Dean.

REGULATIONS:

The following regulations shall apply to all categories of research scholars pursuing courses of study and research leading to the degree of Ph.D.

R-1:

CLASSIFICATIONS

The scholars shall be classified in the following ways

(A) *On the basis of the time devotion to the Ph.D. program*

i) Full-time

ii) Part-time

(B) On the basis of the occupation

i) Teacher, a person on the faculty of a Department of a teaching institute.

ii) Non-teacher

iii) Project staff, A person working on a project undertaken by the Institute (NITK). The Ph.D. program of such a person should be related to his project work.

(C) On the basis of the country he belongs to

i) Indian

ii) Foreign nationals admitted through the Embassy of the respective Governments, after getting approval from the Ministry of External Affairs and 'No Objection Certificate' from the Ministry of Human Resource Development, Department of Education and Government of India or admitted under a MoU.

(D) On the basis of the financial assistance

i) Self-financed A scholar who does not receive financial help like scholarship/ assistantship from NITK, or from any other source during his Ph.D. program.

ii) Fellowship / Scholarship Awardees

(a) A research scholar getting NITK fellowship / scholarship.

(b) A research scholar receiving fellowship / scholarship from outside organizations such as CSIR, UGC, QIP, DST, AICTE etc.

(c) A research scholar receiving fellowship / scholarship from ICCR, Govt. of India.

R-2:

CONSTITUTION OF DEPARTMENT RESEARCH COMMITTEE:

The DRC shall consist of the following, provided each member qualifies to be a Ph.D. supervisor;

(i) HOD

(ii) All Professors of the Department

(iii) Three Associate Professors of the department by rotation. The term of an Associate Professor will be about 2 years, the changeover taking effect on July 1.

Rotation Criteria: If a department has 4 Associate Professors (A,B,C,D) and A,B,C are present members, then during the subsequent two year periods, (B,C,D); (C,D,A); (D,A,B)... shall be the DRC members.

(iv) Supervisors of the scholars.

They do not, however, constitute the regular members (unless covered under (i) or (ii) or (iii)). They participate in DRC meetings only when the cases of their respective scholars are taken up. Also, the proposed supervisor from outside NITK # but from within the country (if any), is to be invited to participate in the DRC meeting when the case of his prospective / respective

candidate is taken up and he will be paid TA/DA by the Institute as per its rules.

NOTE:

If a Co-Supervisor of the scholar is from outside NITK but from within the country, he will be invited for the DRC meeting whenever his scholar's comprehensive, pre-synopsis seminar and final defence is taken up. In all such cases, he will be paid TA/DA by the Institute as per rules.

The HOD shall be the Chairman of the DRC. If the HOD does not qualify to be a Ph. D. supervisor, the senior most qualifying faculty member of the Department will act as the Chairman of the DRC. Faculty members, qualified to be the supervisors, can only be members of DRC. If Chairman of the DRC is not able to attend a DRC meeting due to compelling reasons, senior most DRC member will work as Chairman, DRC. Minutes of all DRC meetings will be sent to Dean (Academics).

R-3:

ELIGIBILITY

R-3.1 Educational Qualifications:

An applicant possessing the following qualification shall be eligible for admission to a Ph.D. Program of the Institute. Degrees obtained through distance education programs shall not be considered. The course as well as University of qualifying degree must be recognized by AICTE & UGC and will be verified by Academic Section before registration.

i) Engineering Stream

Master's degree (M.Tech./ M.E/ M.S.) or equivalent in relevant branch[#] of Engineering / Technology with a minimum CGPA of 6.75 (on 10-point scale) or 60% marks in aggregate, preceded by a minimum CGPA of 6.75 (on 10-point scale) or 60% marks in aggregate in Bachelor's degree in relevant branch[#] of Engineering / Technology.

OR

- (a) Bachelor's degree in relevant branch of Engineering / Technology with a minimum of 70% marks in aggregate or equivalent CGPA and a minimum of 10 years of work experience (at the level of Assistant Professor or equivalent) in an engineering degree level technical institute or R & D organization / industry, and
- (b) Evidence of Master's level R & D work completed.

ii) Sciences / Mathematics / Humanities & Social Sciences Streams

Master's degree or equivalent in the relevant discipline[#] with a minimum CGPA of 6.75 (on 10-point scale) or 60% marks in aggregate, preceded by a minimum CGPA of 6.75 (on 10-point scale) or 60% marks in aggregate, in Bachelor's degree in relevant discipline.

[#] as decided by the DRC

R-3.2 Additional Eligibility Conditions for Part-Time Ph.D. Admission

(i)The applicant should be a regular faculty / employee in the sponsoring institute / organization and must have completed on the last day of receiving applications, a minimum of one year of service after obtaining Master's degree at the level of Assistant Professor or equivalent in an engineering degree level technical institute or R & D organization / industry.

The applicants, who are employed in an NIT on a regular / contract (including the project staff) for three years or more, are exempted from the above condition.

(ii)The candidate should satisfy the DRC that his official duties permit him to devote sufficient time to research.

(iii)He is required to visit NITK to discuss the research work with his supervisor in the Department. He may visit any number of times; but; must visit at least twice in each semester at intervals of not less than a month. All such visits shall be reported to the Chairman of the DRC for record.

R-3.3 Eligibility for Institute Scholarship

- (a) Only full-time Ph.D. research scholars are eligible for the award of the Institute scholarship.
- (b) A candidate/scholar is required to apply for scholarship through the supervisor and concerned Chairman, DRC. In a particular department, scholarships will be awarded only if these are available in that department.
- (c) The eligibility for scholarship & its amount will be as per the guidelines issued from time to time by the Ministry of Human Resources Development, Govt. of India. and / or funding agency.
- (d) Those who are awarded scholarship / fellowship or equivalent from any other source will not be eligible for the institute scholarship.
- (e) In case the semester research progress is unsatisfactory, the scholarship shall be discontinued / stopped.
- (f) Support for doctoral program by the MHRD would be termed as Research / Teaching Assistantship. Only GATE/NET qualified candidates are eligible. All scholars getting Research / Teaching Assistantship would be required to put in at least eight hours of research or teaching assigned to him in the institute.
- (g) A Ph.D. research scholar receiving institute scholarship will receive it for a duration of two years, which may be extendable to 3rd year if the research scholar has published at least one research paper before the start of 3rd year and can be extended / resumed in 4th year if the research scholar has published at least two / one research papers respectively before the start of 4th year. These research papers should be published from his research work in non-paid SCI journals **OR** such other reputed and peer reviewed journals as are recommended by the concerned DRC and approved by the Director.
- (h) Recommendation of extension / resumption of scholarship after second and third year will be done by DRC after considering the above criteria.

Extension / resumption of scholarship is subject to its availability on the date of receiving recommendation from the DRC. No institute scholarship will be given after 4th year.

R-4

RESERVATION/ RELAXATION

R-4.1

Fifteen percent (15%) scholarships (of the total sanctioned Institutional scholarships) shall be reserved for Scheduled Caste applicants and 7.5% for Scheduled Tribe applicants. A total of 3% scholarships, over and above the sanctioned strength, will be reserved for persons with disabilities (PwD) in all the Ph.D. programs of the Institute put together.

R-4.2

For the SC / ST / PwD applicants, the eligibility requirement of marks be relaxed by 5%, or by a CGPA of 0.56 (on a 10 point scale) at both the Bachelor's and Master's level..

R-5

SHORTLISTING and ADMISSION

- (a) The DRC will check and certify the eligibility of the applicant.
- (b) The Chairman DRC will call the eligible candidates for interview by placing notification on institute website and will also mention the reason for non-eligibility of rejected candidates.
- (c) The basic guidelines / instructions for short listing will be framed and issued by the DRC with a copy of the same to the Dean (Academics).
- (d) The short listing of applicants for the purpose of admission test/ interview will be done by the DRC.
- (e) The eligible applicants will be tested by the DRC through written test. Based on their performance in the written test, DRC can shortlist a number of candidates for interview as per the number of vacancies available in the department. The applicants, who are employed in an NIT on a regular / contract (including project staff) for three years or more, are exempted from the above condition.
- (f) The DRC will recommend the selected candidates and their supervisors to the Dean (Academics) for registration. Dean (Academic) will approve the candidate for admission by considering candidate application, supervisor eligibility and recommendation of DRC.
- (g) After getting the certificates checked by the Academic Section and the Dean's approval, the candidate may deposit the fees etc. The candidate must deposit his fees within 15 days of the Dean's approval or as notified by Dean, failing which the candidature shall stand cancelled.
- (h) The registration process of fresh Ph.D. candidates shall be completed before the start of the semester.

R-6

REGISTRATION

R-6.1

A candidate is deemed to have been registered on completion of admission process for the 1st semester of the program. Every scholar is required to deposit the fees and renew the registration every semester till the submission of the thesis. The renewal of registration every semester shall be subject to the satisfactory progress in the preceding semester in his research work as recommended by the DRC. If a scholar's progress is adjudged as unsatisfactory, the DRC may recommend notional registration; however such a chance can be allowed only once during the whole period. A scholar should deposit his semester registration fees only after having been notified by the Academic section that the concerned DRC has recommended his registration for that semester.

R-6.2 Time Period Requirement for Thesis Submission

- a) The minimum period of registration for thesis submission shall be two years for a full-time scholar, and three years for a part-time scholar.
- b) The maximum time for the submission of the thesis for a full-time scholar is five years, and that for a part-time scholar is six years from the date of the initial registration for the Ph.D. Programme. However, candidate is eligible for extension beyond this period only if he has published / received acceptance of at least one research paper out of his research work in non-paid SCI journals **OR** such other reputed and peer reviewed journals as are recommended by the concerned DRC and approved by the Director.
- c) On the recommendation of the DRC and the Dean (Academics), this limit may be extended up to a maximum period of seven years on yearly basis for both the categories by the Director, beyond which the registration shall stand cancelled automatically.

R-7

THESIS SUPERVISOR(s)

R-7.1

Every registered scholar shall be assigned a research supervisor as approved by the DRC.

R-7.2

A regular, full-time, faculty member of the concerned Department of the NITK holding a Doctorate degree can be appointed as supervisor. A non - Ph.D. scientist / engineer having experience (in relevant area of research) of 15 years or more at the level of Associate Professor or higher may also be appointed as co-supervisor.

R-7.3

Depending on the problem, a scholar may be assigned not more than three supervisors, designated as supervisor and co-supervisor(s). In no case, the number of co-supervisor shall be more than one from NITK.

R-7.4 Appointment of alternative Supervisor

A faculty member appointed as Ph.D. supervisor is normally expected to be available to the research scholar in the institute till the thesis is submitted. However, under unavoidable circumstances, such as long leave, resignation, retirement, or death; an alternative supervisor may have to be appointed. In such special cases, the appointment of the alternative supervisor will be regulated as under:

R-7.4.1 A Supervisor proceeds on leave of six months or more

- (i) If the synopsis of the thesis of the scholar has not yet been submitted,
 - a) And the supervisor proceeds on leave for six month or more but less than 12 months, then the supervisor shall immediately inform the chairman DRC whether he will continue to guide and supervise the research work of his scholar effectively during his leave period or not. In case he does not inform within five days of the commencement of his leave, or informs that he will not be able to guide effectively, then he ceases to be the supervisor of that scholar.
 - b) And if at any point of time, the total period of long leaves (six months, or greater) of the supervisor of a scholar equals or exceeds 12 months, that supervisor automatically ceases to be the supervisor.
 - c) And if a supervisor proceeds on leave for 12 months or more, he ceases to be the supervisor (after the expiry of 12 months on leave). In case there is a co-supervisor, he will take over as supervisor else a supervisor shall be appointed by the DRC.
 - d) Once a supervisor ceases to be the supervisor, he can not again become the supervisor of that scholar.

In cases a), b), c), when a supervisor ceases to be the supervisor, the other supervisor (of NITK) if already appointed, shall act as the supervisor; and if there is no such 'other' supervisor, the DRC shall immediately appoint alternative supervisor for the scholar.

- (ii) If the thesis / synopsis of the thesis has been submitted before the supervisor proceeds on leave and the supervisor consents to continue to be the supervisor, then he can continue to be so. If he declines, and there is no co-supervisor (of NITK), a caretaker supervisor will be appointed by the DRC.

Further, if major revision becomes necessary, and the co-supervisor or the caretaker supervisor provides the required help in carrying out the major revision, he will automatically be treated as a supervisor of that candidate.

R-7.4.2 A Supervisor retires

A faculty member, who is due to retire within the next two years from the date the DRC meets to appoint a supervisor, can not be appointed a supervisor. If a faculty member on retirement informs that he shall continue effectively supervising the scholar(s) registered under him, can continue as a supervisor, if either reemployed, or appointed Emeritus Fellow, or the synopsis of the thesis has been submitted, or the Director is convinced of his availability/continued guidance to the scholar and permits him to continue. If necessary, alternative/ caretaker supervisor be appointed by the DRC.

R-7.4.3 A Supervisor resigns

If necessary, alternative/ caretaker supervisor shall be appointed by the DRC.

R-7.4.4 A Supervisor expires

Alternative / caretaker supervisor shall be appointed by the DRC.

R-7.5

At no point of time, there shall be more than eight research scholars including scholars from outside NITK being supervised by any faculty member. This number excludes the Ph. D. scholars who have submitted the Ph. D. thesis.

R-8

COURSES AND CREDITS

A research scholar will be required to pass at least four PG courses (minimum 12 credits) with a minimum CGPA of 7.0 out of maximum 10.0. The scholar can register for these courses after the approval of the research supervisor(s) only.

DRC may appoint a three member RAC, under intimation to Dean (Academics), for a research scholar and may delegate some or all of its functions to RAC. The members of RAC shall be (i) Supervisor (ii) A DRC member other than supervisors (iii) DRC member / Co-supervisor / Outside Expert (TA / DA will be paid by the Institute as per rules).

The scholar shall register for 20 credits in each semester including the credits for the course work. The thesis shall be evaluated as satisfactory / unsatisfactory. CGPA shall be computed on the basis of letter grades obtained in PG courses only.

The part time scholars shall have to complete the course work as full time resident scholar. However this condition can be relaxed / waived off by the Director on the recommendation of the DRC for candidates from R & D organization / industry on case to case basis.

The course work is required to be completed before the comprehensive examination.

R-9

EVALUATION OF COMPREHENSIVE EXAMINATION

R-9.1

Every scholar is required to submit his research plan proposal. The research plan proposal should include a brief account of the related work already reported in the literature. In the plan, the scholar should clearly spell out the investigation/work he intends to carry out and justify the need of the same. Subsequently, the research work should be carried out in accordance with the approved research plan. Any change in research plan can be indicated by research scholar in semester progress reports.

The following procedure is followed for conducting the comprehensive evaluation of the Ph.D. scholars.

(a) The written examination should be conducted by the DRC.

- (b) The result of the written examination should be declared within two weeks as passed / failed.

Every scholar is required to take comprehensive examination, which will test his comprehensiveness in his broad field of research, and his academic preparation and potential to carry out the research. The evaluation shall be a combination of written and oral examinations. The oral examination may be conducted along with the evaluation of research plan proposal, after the candidate has obtained at least 40% marks in written test. The written as well as the oral examination will be conducted by the DRC. Every scholar must pass the comprehensive examination within 12-18 months of his initial registration.

R-9.2

In case research plan is not approved by the DRC, the scholar will have to improve the research plan as per the suggestions of the DRC and get it re-evaluated.

R-9.3

If due to compelling adverse circumstances (as considered so by the DRC), a scholar is not able to submit his research plan proposal and appear in the comprehensive examination as stipulated above, or he is not able to pass the comprehensive examination within 12-18 months period, he, on his request, can be granted an extension of six months. During this semester, he can be registered provisionally only (the normal semester fees, however, will have to be paid), and minimum registration period requirement will automatically get extended by six months. Further, if he receives scholarship, his scholarship for these six months will be stopped.

Only one such chance can be allowed to a scholar.

R-9.4

A scholar will be allowed a maximum of two attempts to pass the comprehensive evaluation, failing which his registration will be cancelled.

R-10

PERFORMANCE MONITORING

R-10.1

The academic/research progress of each scholar will be monitored by the research supervisor. For this purpose, at the end of each semester, a scholar is required to submit the semester progress report to his supervisor. The progress report should cover (i) summary of the work done before the start of the semester under consideration ii) the goals set for this semester, iii) the methodology used in achieving the goals, and iv) the extent of the fulfillment of the goal. The supervisor shall record his comments and the result of his evaluation as satisfactory / unsatisfactory. After recording his evaluation result, the supervisor shall forward the progress report to Chairman, DRC who will apprise the DRC of the same before forwarding it to Dean (Academics).

A part time scholar must submit his progress report to his supervisor personally and make himself available for necessary discussions with the supervisor. The reports submitted on line shall be ignored.

The scholars must submit their semester progress reports latest by Dec. 31st and June 30th every year.

All the scholars are required to present at least three seminars in addition to pre-submission seminars before DRC.

R-10.2

The Chairman DRC in the Department will coordinate, every semester, the collection of progress reports written and signed by the scholars and forwarded by the allotted supervisor(s).

R-10.3

If due to compelling adverse circumstances (as considered so by the DRC), a scholar is not able to submit his progress report by the stipulated date, or the progress of a scholar is adjudged by the DRC as unsatisfactory, he, on his request, can be allowed an additional chance for the same. He will improve his work and submit the report again at the close of the following semester (after six months). During this semester, he can be registered provisionally only (the normal semester fees, however, will have to be paid), and the minimum registration period requirement will automatically get extended by six months. Further, if he receives scholarship, his scholarship for these six months will be stopped.

Only one such chance can be allowed to a scholar during his entire Ph. D. program.

If, even on having been granted extension, he does not submit the progress report within the stipulated time or on resubmission also, the progress is adjudged as unsatisfactory by the research supervisor, his registration shall stand cancelled and he shall cease to be a research scholar of the Institute.

R-10.4

The cases where some punitive action is taken will be reported to the Director.

R-11

SEMINAR/ SYNOPSIS/ PANEL OF EXAMINERS

R-11.1

Pre-synopsis Seminar

- (i) (a) A research scholar will be allowed to deliver his pre-synopsis seminar only after getting at least a CGPA of 7.0 / 10.0 in PG courses and after publishing / getting acceptance of at least two research papers out of his research work in non-paid SCI journals **OR** such other reputed and peer reviewed journals as are recommended by the concerned DRC and approved by the Director.

On research scholar's request for pre-synopsis seminar, DRC shall evaluate the journal publications of the scholar from his Ph.D. work and consider his performance in PG courses. If found satisfactory, DRC shall assess the scholar's work through a pre-synopsis seminar. Pre-synopsis seminar shall be held not

earlier than one year for full-time and 2 years for part-time scholars from the date of passing the comprehensive evaluation.

(b) The schedule of the pre-synopsis seminar shall be notified well in advance (at least three days in advance) so as to enable the interested staff members and the students to attend it.

R-11.2 Synopsis

The scholar will submit the synopsis only on research supervisor's and DRC's satisfaction on quality of the work. The synopsis should precisely reflect all aspects of the research work to be included in the thesis.

- (a) The scholars shall submit 9 copies of the synopsis in the same format as specified for the thesis to the Chairman, DRC. The DRC will examine the synopsis, and the Chairman DRC shall forward the synopsis with its recommendations to the Dean.
- (b) The synopsis should be submitted normally within 2 months after the presentation of pre-synopsis seminar. In case the synopsis is not submitted in the specified period, the scholar may be asked to present another pre-synopsis seminar.
- (c) The scholar can submit his thesis after a gap of at least one month after submission of the synopsis.
- (d) The scholar shall be required to submit fresh synopsis if he fails to submit his thesis within 8 months of the submission of the earlier synopsis. However, in case a scholar fails to submit his thesis within the stipulated time and has suitable justification for the same, the Director may on recommendations of the DRC and on individual merits of each case grant him/her extension in time of not more than two months, i.e., the scholar may be allowed to submit his thesis within a period not exceeding 10 months from the date of the submission of the synopsis. However, the thesis should be submitted within the prescribed time limit as per regulations.

R-11.3

Panel of Examiners

A panel of at least ten external experts, including foreign experts, and the authors of the recent papers in the references cited by the scholar in the area of his Ph.D. work would be suggested to the DRC by the Supervisor. The DRC will consider the suggested panel and will finally recommend to the Director (through Professor-in-charge, Examinations), a panel of ten external examiners, which will include five examiners from outside India, from advanced/developed countries and the rest from India, preferably from the Institutes of repute. The recommended panel will be considered and approved/ modified by the Director.

R-12

BOARD OF EXAMINERS

On receipt of the title and synopsis of the thesis, the Director will appoint a Board of Examiners for each candidate from the list approved by the DRC. The Board of examiners will consist of two external examiners, one out of which would be from

within India, and the other from abroad. These external examiners shall be chosen normally from the panel of examiners recommended by the DRC as aforesaid. A person working in the same organization(s) / institute(s) where the research scholar is employed cannot, however, be appointed as External Examiner for that research scholar.

R-13

THESIS SUBMISSION

R-13.1

The scholar will submit a soft copy of the thesis in PDF format on CD, and four unbound copies with soft covers, typed in English, one and a half spaced, printed in Times New Roman 12 pt. or Arial 11 pt. on both sides of A-4 size papers. The margins on right page shall be 1.25" –left, 1" –right, 1" –top and 1" –bottom and the margins on left page shall be 1.25" –right, 1" –left, 1" –top and 1" –bottom. The thesis shall be submitted along with the examination form and examination fee of Rs.5,000/-.

R-13.2

The thesis shall contain a critical account of the research carried out by the scholar. It should be characterized by discovery of facts or fresh approach towards interpretation of facts and theories or significant contribution to knowledge or development or a combination of these. It should bear evidence of the scholar's capacity for analysis and judgment as well as ability to carry out independent investigation, design or development.

No part of the thesis or supplementary published work should have been submitted for the award of any other degree or diploma.

- (j) A research scholar can submit his thesis only on having published / acceptance of at least two research papers out of his Ph.D. research work in non-paid SCI journals **OR** such other reputed and peer reviewed journals as are recommended by the concerned DRC and approved by the Director.

R-13.3

A candidate can submit his thesis within the time period as stipulated in regulations provided that he has completed the minimum period of registration.

R-14

THESIS EVALUATION

All correspondence/ notifications in regard to thesis evaluation and viva-voce examination of the scholar (except where stated otherwise) shall be done by the Professor-in-charge, Examinations. Except for the correspondence with the candidate or general circulars/ notifications, the correspondence shall be confidential.

R-14.1

Each examiner will be requested to submit a detailed assessment report and his recommendation within six weeks of the date of receiving the thesis.

i) The examiners will examine the thesis individually with a view to judge whether the thesis is a piece of research work characterized by:

- a) The discovery of facts, or
- b) A fresh approach towards interpretation and application of facts or theories, or
- c) A distinct advancement in technology.

ii) Each examiner will give his opinion about candidate's capacity for critical examination and sound judgment. The examiner will submit the report to the Professor-in-charge, Examinations on the prescribed form supplied by him clearly recommending that:

- a) The thesis is accepted for the award of the Ph.D. degree subject to the candidate's giving satisfactory answer to the queries specifically mentioned in the report, at the time of Viva-Voce examination,

or

- b) The candidate be asked to resubmit his thesis in the revised form,

or

- c) The thesis be rejected.

R-14.2

In the event of the thesis report not being received from an examiner within a period of three months from the date of dispatch, the Director may approve alternate examiner in his place for evaluating the thesis from the approved list of examiners. Before corresponding with the alternate examiner, the original examiner must be informed by the Professor-in-charge, Examinations, of the cancellation of this appointment, stating the reason therein.

R-14.3

- (a) If both the examiners recommend acceptance / rejection the thesis be accepted / rejected respectively.
- (b) If one examiner recommends acceptance and other revision or rejection the thesis will be sent to the third examiner. If the third examiner recommends acceptance / rejection, the thesis will be accepted / rejected respectively. If he recommends revision, the scholar shall resubmit the revised thesis. The revised thesis will be sent to all the three examiners. If at least two examiners recommend acceptance, the thesis will be accepted **else** rejected.
- (c) If both the examiners recommend revision, then a third examiner will be appointed and the revised thesis will be sent to all three examiners. If at least two examiners recommend acceptance, the thesis will be accepted **else rejected**.
- (d) In all other cases the thesis will be considered as rejected.

Any doubt arising out of the procedure laid down above shall be referred to the Director for a decision.

R-15

RESUBMISSION

When a thesis is to be revised and resubmitted, the scholar should be informed about the comments of the examiners. The revised thesis is to be submitted within one year, but not earlier than three months.

The revised version of the thesis will be sent to all the examiners for their fresh recommendations.

R-16

VIVA-VOCE EXAMINATION

On receipt of the thesis examination reports from the examiners, the Professor-in-charge, Examinations, shall send all such reports to the Director for further necessary action. The Director, on the basis of the reports will decide whether the candidate should be allowed to appear in the viva-voce examination or not. The Director will send back the reports, along with his decision to the Professor-in-charge, Examinations, for further action. The Director's decision on the thesis reports shall be communicated by the Professor-in-charge, Examinations, to the scholar, and the Chairman of the concerned DRC. The Professor-in-charge, Examinations, will intimate names and address of the external examiner for the candidate, and the examiners' reports to the Chairman. The Chairman DRC will form the examiner's committee for the viva-voce examination.

R-16.1

On having been allowed to appear in the viva-voce examination, the scholar is to defend his thesis orally before the Committee of examiners comprising supervisor (Chairman of the committee), one DRC nominee and one Indian external examiner. The Chairman DRC will coordinate with all the examiners and the scholar and will fix a date for holding the viva-voce examination. The questions / queries communicated by the thesis examiners in their reports shall be intimated to the candidate through his supervisor at least one week before the date of conduct of the viva-voce examination. The schedule of the viva-voce examination shall be adequately notified so as to enable interested staff members and students to attend it.

R-16.2

- (i) In case of non-availability of the Indian external examiner for conducting the viva-voce examination, the Director may appoint alternate examiner to conduct the viva-voce examination from the existing panel.

If the need be, the DRC may suggest a fresh panel of examiners.

- (ii) The viva-voce examiners shall be provided with the reports of the thesis examiner before the viva-voce examination.
- (iii) The research supervisor shall assist the Chairman in arranging the viva-voce examination of the candidate as early as possible.
- (iv) In case of the inability of the research supervisor to have the viva-voce examination conducted due to any reason whatsoever, the Director may appoint another examiner (in place of research supervisor), to conduct the viva-voce examination, from amongst the faculty of the department

concerned who belongs to the particular field in consultation with Chairman DRC. In such cases also, the Ph.D. work will be deemed to have been carried out under the guidance of the supervisor (s) only.

- (v) After the viva-voce examination, the examiners will prepare a detailed joint report giving one of the following three recommendations.
 - (a) recommended for the award of the degree
 - (b) The thesis be resubmitted after a minimum period of six months incorporating the suggestions of the examiners.
 - (c) not recommended for the award of the degree

The report shall be sent by the Chairman DRC in a confidential cover to the Professor-in-charge, Examinations.

- (vi) Any other matter not explicitly provided herein or of an exceptional nature, may be referred to the Director for his decision.

R-17

AWARD OF THE Ph.D. DEGREE

On the completion of all stages of the examination, a Committee consisting of the Director, the Dean (Academics) and the Chairman of the DRC concerned shall examine the reports of all the examiners (thesis and viva-voce) and decide as under: -

- a) that the degree be awarded;
- b) That the degree shall not be awarded.
 - i) The thesis is to be resubmitted.
 - ii) The thesis is rejected on the conclusion that the thesis is not genuinely the work of the candidate.

For (b) i) above, the Committee, if required, shall provide to the candidate a list of all corrections and modifications to be made in the thesis, including suggestions made by the examiners during the thesis evaluation, and the result of the candidate will be declared after the candidate submits two copies of the corrected thesis certified by the internal examiner that the necessary corrections and modifications have been made.

R-18

INSTITUTE SCHOLARSHIP

R-18.1

Those candidates who are admitted on full-time basis are considered on request, for the award of Institute scholarship of the amount as decided by the Board of Governors and directed by the Government of India from time to time. The scholar must submit a certificate to the effect that he is not in receipt of any financial aid from any other source for pursuing the Ph.D. research work. The scholars getting Institute scholarships are required to provide 8 hrs of work per week as directed by the Head of the Deptt/ Director.

A scholar is liable to refund whole of the financial assistance/scholarship received if he has joined as full time research scholar and abandons and leaves his Ph.D. work without completing it.

R-18.2

In addition, the scholars will be provided contingency grant in accordance with the rules of the Institute.

It is to be noted that admission to the programs and award of scholarship are not linked. Admission to a program does not guarantee the award of scholarship. Those who are not awarded scholarship can continue with the program as self-financed scholars. The Institute may provide fee waiver to the self-financed scholars subject to the final approval of Director on the recommendation of DRC & the Dean (Academics).

R-19

LEAVE AND ATTENDANCE

All full-time research scholars (with or without scholarship) are required to mark their daily attendance in the attendance register maintained by the Deptt. The Chairman DRC shall also maintain a proper leave account of each such scholar. The leave of a scholar should be recommended by his Supervisor and shall be sanctioned by the Chairman DRC.

A full-time research scholar is entitled to avail leave as per Leave and Attendance Rules formulated and amended from time to time by the Senate. Presently these are as under:

- A full-time Ph.D. scholar during his stay at the Institute will be entitled to leave of 30 days including leave on medical grounds, per academic year. He will not be entitled to mid-semester breaks/vacations, summer and winter vacation.
- Leave beyond 30 days in an academic year may be granted to a Research Scholar in exceptional cases, subject to the following conditions:
 - the leave beyond 30 days will be without scholarship and
 - Such an extension of leave up to additional 30 days will be granted only once during the program of the scholar.

The women research scholar will be eligible for Maternity Leave as per MHRD rules. However, the minimum registration period will be extended by the leave period.

R-20

CANCELLATION OF REGISTRATION

Registration of a candidate can be cancelled in any one of the following eventualities, with due approval of the Director.

- (i) if he absents himself/ herself for a continuous period of four weeks without prior intimation/ sanction of leave.
- (ii) if he resigns from the Ph.D. Programme
- (iii) if he fails to renew his registration within 4 weeks of the start of the semester as per provision contained in these Ordinances & Regulations.

(iv) if he does not submit his semester progress report by the stipulated date or his academic progress is found unsatisfactory.

(v) If he does not clear the comprehensive evaluation as stipulated.

(vi) If he is found involved in an act of misconduct and/ or indiscipline and a competent authority has recommended termination. For all purposes, the conduct/ discipline rules applicable to B.Tech. / M.Tech. students of the Institute shall apply to Ph.D. research scholars also.

(vii) If at any stage, information furnished by the scholar in his application is found false or incorrect.

R-21

GENERAL

R-21.1

Notwithstanding anything contained in these Ordinances & Regulations, all categories shall be governed by the rules and procedures framed by the Senate, and in force from time to time.

R-21.2

Any doubt or dispute about the interpretation of these Ordinances and Regulations shall be referred to the Director whose decision shall be final.

R-21.3

Eligibility for admission to Ph.D. programs in different disciplines may, from time to time, be reviewed, approved by the Senate, and implemented.

R-21.4

All exceptions and issues not covered above may be decided by a committee consisting of the Director, Dean (Academics), Head of the Department concerned and the Supervisor(s) of the candidate concerned.