INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

RULES AND REGULATIONS

Ph.D. Programme

Academic Office

2015-2016

July, 2016

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

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Ph.D. Programme

As a result of the sound research base and extensive infrastructural facilities available, the Institute offers a Ph.D. Programme in a wide range of areas in Engineering, Science, Design and Humanities & Social Sciences, Management. The broad objectives of the Ph.D. programme are : to keep pace with the expanding frontiers of knowledge and to provide research training relevant to the present social and economic objectives of the country.

The academic programme leading to the Ph.D. degree is broad-based. It involves a minimum course credit requirement and a research thesis. The institute also encourages research in interdisciplinary areas through a system of joint supervision and interdepartmental group activities. The presence of a strong research oriented faculty provides excellent opportunities for such programmes. The Institute undertakes sponsored research and development projects from industrial and other organizations in the public and private sectors.

Facilities for research work leading to the Ph.D. Degree are available in all the Science, Engineering, Design and Humanities & Social Sciences, Management departments. In addition to the facilities available in the laboratories and Workshops of his/her own department, a Ph.D. scholar has access to the central facilities available elsewhere in the Institute also. Several departmental and Institute-level seminars are held throughout the year. A large number of distinguished scientists and engineers both from India and abroad, visit the Institute to deliver lectures and hold discussions with the research groups. The Ph.D. students thus get ample opportunities to pursue their research programmes in a truly stimulating environment.

Ph.D. Rules and Regulations

Ordinances

The Ordinances of the Institute shall take precedence over the Rules in the matter of any dispute.

O.D. 1

a) A student will be considered by the Senate to be eligible for registration for the degree of Doctor of Philosophy on his/her making an application in the prescribed form provided he/she has obtained M.Tech. degree of this Institute or an equivalent qualification by virtue of an examination.

b) A student who possesses an M.Tech./M.Phil. degree or equivalent qualification is not ipso facto eligible for registration but shall be required to fulfill the minimum credit requirement under an approved programme of studies.

O.D. 2

a) The Degree of Doctor of Philosophy may be conferred on a student subject to the following conditions :

   i) Research work has been carried out at the Institute under the guidance of Supervisor(s) for **at least two years in the case of all students** (except external students) and **three years in the case of external students after their date of registration** on a topic duly approved by the Senate.

   ii) The thesis submitted by the student is required to be recommended for the award of the Ph.D. degree by two external referees and by the Board of Examiners constituted for the viva-voce examination.

b) Notwithstanding the provision of O.D.2 (a), a student registered for the degree of Doctor of Philosophy may be permitted to carry out a part or the whole of his/her research work outside the Institute in a factory, laboratory, workshop, worksite or other research centres duly approved for the purpose by the Institute.

O.D.3

The degree of Doctor of Philosophy shall not be conferred as an ad eundem degree.

O.D.4
Notwithstanding the provisions of O.D.1, the Senate will consider the registration for the degree of Doctor of Philosophy of a student who has obtained the B.Tech./M.Sc./M.A. degree or an equivalent qualification by virtue of an examination in a subject duly approved by the Senate, and has successfully completed the minimum prescribed credit requirements under an approved programme of studies.

O.D.5
Institute Faculty, Research Assistant, Technical Assistants or any other duly approved category of Institute Staff may be registered for the degree of Doctor of Philosophy under the provisions of O.D.1 and O.D.4.

Rules and Regulations

The Institute offers facilities for work leading to the degree of Doctor of Philosophy (Ph.D.) in various departmental and Interdisciplinary research areas. Extracts of the Rules and Regulations governing the Ph.D. programme are given below:

REGISTRATION

1. On joining the Institute every student is required to plan his/her academic programme in consultation with a Faculty Advisory Group of the academic Unit (Department/Interdisciplinary Programme/ School/ Centre in which the student is admitted. Details of the academic requirements of this programme and details of courses available are given in the bulletin. **The bulletins are available on the website of each academic unit**.

2. The registration for each semester is carried out through the computerized "Online Registration" programme. This registration is mandatory for all students, and they must register themselves on the prescribed dates announced from time to time. Every student must register in each semester until he/she completes the programme.

3. All students have to clear the Institute and Hostel dues before Registration.

4. If a student does not register for the regular Semester (Autumn or Spring) without prior written permission of PGAPEC, his/her name is likely to be struck off from the rolls of the Institute and he/she may not normally be

readmitted. To obtain prior permission, the student must apply to PGAPEC at least one month in advance of the date of registration.

5. The Faculty Advisory Group is authorized to carry out the course registration and also adjustments as specified later.

6. Along with the credit courses, a student is normally allowed to register for a maximum of TWO Audit course per semester, with consent of the Ph.D. Supervisor and /or the Head/Convener of the concerned Academic Unit. The registration for this is also to be done in consultation with the Faculty Advisory Group/ Supervisor and at the same time as for the credit courses.

7. A student is not permitted to re-register for a course, which he/she has undergone and in which he/she has secured AU, DD or higher grades.

8. Any student who concurrently registers for any postgraduate degree at another organization shall be automatically de-registered at the Institute.

9. **Submission of final year mark sheets/provisional certificates of their qualifying degree by the Doctoral students**

   a) All Postgraduate students should ordinarily submit their certificates latest by **31st July /30th January** when admitted in the **Autumn** / **Spring Semester,** of a given academic year, respectively, after joining the Institute.
   b) The students who are unable to submit their certificate by these dates, should apply for extension along with an undertaking stating the due date for submission, giving proper reasons on prescribed form to be developed for the purpose.
   c) Even if a student does not submit the certificate until the commencement of the Semester end examination, he /she would be allowed to appear in the examination. However, the results of such a student shall be withheld until the required documents are produced.
   d) Cases of students who do not submit the certificates after the first semester will be reported to the PGPC and the Senate for further consideration and decisions/actions.

COURSE ADJUSTMENTS

Within the period prescribed in the Academic Calendar, a student can substitute one or more courses by others. For this purpose the student **has to carry out Course Adjustment** in consultation with his/ her Faculty Advisory Group.

1. Admission

R. 1.1 : Amended as resolved in 141st meeting of the Senate held on 11.3.98

Student Status : The Status of the students admitted to the Ph.D. programme shall be classified under any one of the following categories :

FULLTIME RESEARCH SCHOLAR

i) Teaching Assistantship (TA)
ii) Teaching Assistantship through Project (TAP)
iii) Govt./Semi Govt. Fellowship Award (FA) QIP, CSIR, UGC, DAE, DST, DBT, NBHM, etc.)
iv) Sponsored Candidates (SW)
v) Self Financed (Indian Nationals/Foreign Nationals/Study Leave (SF)
vi) Foreign Nationals with Indian Council for Cultural Relation Award (ICCR)

PART TIME RESEARCH SCHOLAR

i) Institute Staff (IS), for Institute Staff of IIT Bombay
ii) Project Staff (PS), for Project Staff of IIT Bombay
iii) Research Assistantship (RA)
iv) Research Assistantship through Project (RAP)
v) External candidates, sponsored by recognized R & D organizations (EX)
vi) College Teacher : Candidates working in Colleges / Educational Institutes (CT)

For more details regarding the above categories, kindly refer Ph.D. information brochure on Institute portal. **(http://www.iitb.ac.in/newacadhome/phd.jsp)**

R.1.2 : Registration/Temporary Withdrawal from/Leaving the Programme

a) If a student leaves the programme any time within the first two years without prior permissions of the Senate, he/she would forfeit his/her student status.

b) If a student withdraws from his/her Ph.D. programme any time without intimation (within the first two years) after admission, his/her student status

ceases and he/she would not be readmitted with any weightage for the credits acquired the period of stay.

c) In case a student wishes to temporarily withdraw from his/her Ph.D. Programme, he/she may do so only after a period of two years following his/her date of **Confirmation of Registration** with prior permission of the Senate. The application for temporary withdrawal must be endorsed by the Ph.D. Supervisor(s) and the Postgraduate Committee (PGC) of the academic unit in which the student is registered. Temporary withdrawal could be granted for, upto one year (two semesters) initially. Extension of the duration of withdrawal beyond the period of one year would normally not be encouraged, and could be granted by the Senate on recommendation by the PGAPEC, only under circumstances which the PGAPEC deems to be genuinely extraordinary. The period of temporary withdrawal will not be counted, when counting the number of semesters of Ph.D. registration already completed by the student. **(Amended as resolved in 196th Senate held on 23-09-2009)**

d) A Research scholar, if recommended by DPGC/IDPC, recognised by PGPC and approved by Senate, may be allowed to change his/her status to "external student" earlier than 2 years if,

(i) he/she has completed all courses.

(ii) He/she gets a sponsorship certificate from the organization (recognised by PGPC) he/she joins and

(iii) He/she is able to get a suitable local supervisor to act as guide in the broad area of research approved by the DPGC/IDPC. The student is required to complete all the formalities regarding the change of status within one year of leaving the Institute.

2. Eligibility for Admission

R.2.1. : Minimum Qualification for Admission (General eligibility criterion for Admission in all Academic Units).

One of the following in appropriate subject areas:

1. Master's Degree in Engineering / Technology or equivalent, with First class or 60% marks (55% marks for SC/ST)
2. Master's degree in Science or Bachelor's degree in Engineering/ Technology or equivalent, with First class or 60% marks (55% marks for SC/ST). For admission in the Department of Humanities and Social Sciences and in the Industrial Design Centre, the percentage requirement is 55% marks or equivalent (50% for SC/ST).

Candidates meeting this requirement must also fulfill ONE of the following additional requirements :

- Valid GATE/CEED Score
- CSIR/UGC/NBHM / DBT / DST Inspire Award or Fellowship.`
- Minimum of 2 years of professional work experience, for Sponsored (SW) / Self Financed (SF) /Institute Staff (IS) category.
- Minimum 6 months project work experience in IIT Bombay, for Project Staff (PS) category.

Requirements for Teaching Assistantship (TAship)/ Research Assistantship (Raship)

Candidates with Master's Degree in Engineering / Technology or equivalent degree are eligible for TAship/ RAship. Candidates without Master's Degree in Engineering/ Technology or equivalent degree require either a valid GATE score or qualified through a National Level Test UGC/ CSIR/ NBHM/ DBT JRFship or DST Inspire fellowship to be considered for TA/RAship.

In addition to the general eligibility criterion, the applicant must satisfy the eligibility criteria specified for the respective Departments/Centres/ Schools/ Interdisciplinary Groups.

R.2.2 : Change from M.Tech. to Ph.D.

a) If a particular student who is pursuing a full time M.Tech. Programme at the Institute fulfils the minimum qualifications prescribed for admission to any specific Ph.D. programme of the Institute and wishes to change over to that Ph.D. Programme, he/she may be permitted to do so provided he/she has obtained an SPI of 9.00 or above after having registered for **full** credits of course work in the first semester (See M.Tech. rules MR 2.1 (2) and MR 2.1 (3)).

Note:
The student(s) shall apply for the change over by the end of the first semester through the DPGCs/IDPCs/PGCs, will forward the application with due recommendations to the PGAPEC for consideration.

b) **Award of M.Phil. Degree to the Ph.D. students from Science Stream**

A student who has earned 34 credits through coursework during the Ph.D. Programme may be permitted to register for the M.Phil. Programme. This is permitted in the Departments of Physics, Chemistry, Mathematics, Earth Sciences, Biotechnology and Humanities & Social Sciences. To obtain an

M.Phil. Degree the student must successfully complete one year of project work leading to the dissertation.

c) Award of M.S. by Research to the Ph.D. students from the Engineering Stream (Amended : Ref. 136Th & 221st Meeting of the Senate)

A student pursuing the Ph.D. Programme in an Engineering discipline and who has successfully completed 22-34 credits of course work (22 for students with M.Tech. qualification and 34 for students with B.Tech./B.E. qualification) may be permitted to register for the M.S. Programme by Research leading to a dissertation. The total duration of M.S. Programme will be 2-3 years.

Procedures for Exit option from Ph.D. Programme to M.S. By Research (Ref. : 221st Meeting of the Senate)

1. If PGAPEC decides to recommend discontinuation of Ph.D. with an option of conversion to M.S. (Research) then the student will be informed accordingly.
2. The student should apply for conversion within a month, along with a work plan & proposed timelines for the completion of M.S. (Research) degree, through the Supervisor.
3. If the student applies, and the work plan & timelines are approved by the PGAPEC then the Ph.D. is discontinued & converted to M.S. (Research).
4. If no response received by the student within a month, the PGAPEC may recommend discontinuation of his/her Ph.D., without the option of conversion to M.S. (Research).

Procedures for Evaluation of the M.S. Thesis (Ref : 190th and 2011th Senate Mtg.):

1. The thesis be sent to two external examiners.
2. The **first report** to be received from any of the two external examiners report be considered (if favourable) to permit the student to appear in the Viva Voce examination.
3. However, if this examiner has marked either option (d)- The thesis requires major modifications/revision. The nature of the modifications required are indicated. It is recommended that the revised thesis be referred again by an external examiner. OR option (e) – The thesis be rejected, the office may wait for the recommendation of the second

referee and if favourable, may be considered to permit the student to appear in the viva-voce examination.

4. If both reports are unfavourable, the PGAPEC may treat each such case individually on a case to case basis.
5. The Viva-voce examination will be conducted by a Committee similar to the final stage evaluation of the M.Tech. Project.
6. The M.S. Degree be awarded after receipt of favourable reports and a successful viva-voce examination.

R.2.3: The following procedure is to be followed for change from one programme to another (Ref. 141st Senate Meeting)

i) These Transfers will be considered on a case-to-case basis.

ii) Request for a change of PG programme should come from the student and should be endorsed by the Supervisor/RPC.

iii) The application for consideration for admission to another PG programme should be routed through the Postgraduate Committee of the Dept./Group/Centre/ School in which the student was originally registered. It must also be recommended favourably by the Postgraduate Committee of the academic unit (Department/ Centre/ School/ Interdisciplinary Progamme) to which the student wishes to be admitted.

iv) The candidates should satisfy all the academic requirements for the award of the degree for which he is being considered.

v) DPGC/IDPC/PGC may recommend the time limits for submission of Dissertation/Thesis, if required.

vi) The request will then be considered by PGAPEC and put up for subsequent approval by the Senate, if the PGAPEC recommends the change.

R.2.4 : **Concurrent registration of any PG degree at another Organization by any Student**

Any student who concurrently registers for any postgraduate degree at another organization **shall be automatically deregistered** at the Institute.

3. Pattern of Courses and Credits

The courses offered for the Ph.D. Programmes may be : Lecture Courses, Laboratory Courses, Design Courses, Seminars, courses pertaining to Communication skills.

R.3.1 :

The credit for a course depends upon the contact hours and self-study hours associated with it and is obtained by adding all these hours. The credits for all the available courses are indicated in the Courses of Study Bulletin.

R.3.2: Credit Seminar

A Seminar shall satisfy the following conditions:

a) Each seminar shall carry four credits.

b) The Seminar shall be treated as a course for the purpose of registration and evaluation.

c) The Seminar co-ordinator appointed by the DPGCs/IDPCs/PGCs shall arrange the seminars and forward the grades awarded by the panels of examiners to the Academic Office by the end of the semester.

d) A student shall not take more than two Seminars during the entire Ph.D. Programme.

R.3.3 Communication Skills I & II courses (PP/NP course) (Ref:165th, 205th & 216th Senate meeting)

a) These courses are compulsory for all Ph.D. students.
b) Ph.D. students are normally required to clear the Communication Skills course within the first two semesters.
c) These courses are an addition to the minimum course credit requirement prescribed by the DPGCs/IDPCs.
d) Students having a qualifying degree from IIT who have cleared the 'Communication Skills' course during their M.Tech. Programme are exempted from this requirement.

R.3.4 Minimum number of students required to run a particular coursework (Ref 229th Senate Meeting)

Minimum of 5 students should be registered in a course to be run as a Department/Institute Elective course. If less than 5 students are registered at any given point of time, the concerned DPGC/Head of Academic units may take a decision on case to case basis.

Even a single (1) student if register for 'Minor' course, the course is required to be offered.

4. Course Credit requirements and Registration for courses

All students in the Ph.D. programme are required to acquire the prescribed credits through course work, which shall normally be completed :

a) Within one year from the date of joining by the students having M.Tech. or equivalent qualification (206th Meeting of Senate) and

b) Within the first two semesters from the date of joining by the students having B.Tech./M.S./M.A./equivalent qualification.

Ph.D. students will be allowed to complete extra credit courses, if necessary **(Ref: 168th Senate meeting)**

R.4.1 : Applicable to students with M.Tech. or equivalent degree (Amended : 136th Senate meeting)

a) The credit requirements for students **having M.Tech./M.Phil. or equivalent qualification, will be a minimum of 16 credits i.e. 2 courses and a seminar and maximum of 22 credits**. The courses could be taken in any academic unit of the Institute (Department/ Centre/ School/ Interdisciplinary programme).

b) The students may earn upto a maximum of 4 credits through seminars.

c) Students with an M.Tech. degree who have been admitted to the Ph.D. Programme should also undergo at least two courses at the M.Tech./ Ph.D. level in addition to the Seminar requirements.

R.4.2 : Applicable to students with M.Sc./M.A. or equivalent degree and admitted to Ph.D. programme in Science discipline.

a) The credits requirements for students having **M.Sc./M.A. or equivalent qualification admitted to a Science Department shall be 34 to 46 credits**. The courses could be taken in any academic unit (department/ centre/ interdisciplinary programme/ school) in the Institute.

b) **Credits acquired through PG level courses shall be 24 or more** (minimum 4 courses).

c) The students may earn up to a **maximum of 8 credits through Seminars**, which should be spread over two semesters.

R.4.3. : Applicable to students with B.Tech. or equivalent degree and M.Sc. or equivalent degree admitted to Ph.D. programme in Engineering discipline.

a) The **credits requirements for students having B.Tech. or equivalent qualification shall be 44 to 56 credits**. The same number of credits should also be earned by students with M.Sc. degrees of equivalent qualifications admitted to the Ph.D. programme in any one of the Engineering disciplines.

b) The students may earn up to a maximum of 8 credits through Seminars, which should be spread over two semesters.

c) The students may also register for a R&D project to complete credits.

d) **Credits acquired through PG level courses shall be 30 or more**. (minimum 5 courses)

R.4.4.1 : Applicable to students of Biomedical Engineering

The specialization-wise and student's qualifications-wise credit requirements can be decided and administrated by the Department subject to minimum course credit requirements as prescribed by the Institute norms. Students should be informed about the requirements at the time of joining the programme. The completion of the required coursework should be checked by the concerned academic unit (BSBE Department), while forwarding the application for confirmation of registration (Ref : 183rd PGPC meeting).

R.4.4.2 : Applicable to students of School of Management (Amended : 186th Senate meeting)

The course requirement for students entering with an M.Mgt. or an equivalent degree should be a minimum of 40 credits and maximum of 64 credits. For all other students the course requirement would vary between 52 to 64 credits.

Candidates who register for the minimum credits should complete them within two semesters as per rule, whereas students who have been assigned course credit requirements more than minimum, may be considered on a case by case basis by the PGC of the School. Their time period of completion of coursework may be appropriately recommended to the PGAPEC. However, the total period admissible for completing the programme will remain unchanged in all cases.

R.4.4.3: Applicable to students of IDC (Ref: 173rd Senate Mtg.)

a) For students with Postgraduate design qualifications, the credit requirement is 24 credits:

I semester – 20 credits; II semester – 4 credits

b) For students with Undergraduate design qualifications the credit requirement is 56 credits and the courses will be common with the existing M.Des. Programme.

R.4.5. : Reduction in Course Credit requirement

This rule applies to students who have a coursework requirement of two semesters. The DPGCs/IDPCs shall carefully examine any case of reduction in course credits and recommend such cases to the PGAPEC, giving appropriate justification in terms of any relevant post B.Tech./M.Sc./M.A. or equivalent qualification or proven capacity for independent research. While approving the cases of students who have been recommended by the respective PGCs/IDPCs for reduced course credits, the reason for prescribing such reduced course credits shall be placed by the PGAPEC before the Senate for information. **In no case shall the reduced credits requirements be less than 24 credits**.

R.4.6 : Minimum/Maximum Course credit registration in a Semester

The **full-time students** shall register through their respective Faculty Adviser(s)/ Supervisor(s) for not less than 18 credits in the first Semester of the course programme if the total credits required are 18 or more. However, staff members of the Institute admitted to Ph.D. programme shall register **for not more than 18 credits in the first Semester** of the programme if the total credits required are 28 or more. Other students with course credits requirements below 18 credits shall register through the Supervisor(s) for the entire prescribed credits in the first Semester itself.

R.4.7. : Language Courses
A language course shall not form a part of the minimum requirements of credits, prescribed for students with M.Tech. or equivalent qualification.

R.4.8. : Extension for Commencement of Coursework
Students who are unable to commence their course programme during the Semester in which they have been admitted should apply to PGAPEC through DPGC/IDPCs/PGCs and obtain permission to commence their course work in the following semester.

R.4.9 : The procedure for registration of courses shall be as follows:

a) The students, after payment of prescribed semester fees, complete their registration On-line in consultation with the faculty advisor(s)/ Supervisor(s) in the academic unit. Such registration is required to be approved by his/her faculty advisor/ Supervisor.

b) The students, in consultation with the supervisor/faculty advisor, can carry out course adjustment within the time limit provided in the Academic Calendar.

c) The DPGC/ IDPC/ PGC shall finalize the course programme of the students in consultation with the Supervisor(s).

d) Recommendations, if any, about reduction of course credits shall be sent to PGAPEC by DPGC/IDPC/PGC in the beginning of the I or II semester along with the applications for registration for due approval.

e) The Academic Office shall inform the PGAPEC of any discrepancy in the Registration. However, the students should ensure on their own that they comply with the credit requirements listed under R.4.1, R.4.2,R.4.3,R.4.4, R.4.4.1,R.4.4.2. R.4.4.3 above.

f) The PGAPEC shall approve the course programmes of all students after due scrutiny.

R.4.10 : Adjustment of Course(s)
A student can add to his/her academic load, one or more courses not registered for earlier or substitute one or more courses by others by filling the Course Adjustment Form, within the first two weeks from the commencement of classes provided the course credit requirements as prescribed under R.4.1, R.4.2, R.4.3, R.4.4, R.4.4.1, R.4.4.2, R.4.4.3 remain unchanged.

R.4.11 : Dropping of course(s)

A student may drop courses for which he/she may have registered if the academic load for the given semester is found to be too heavy (Course Dropping Form). Such dropping is permissible till the date as given in the academic calender provided the credits requirements laid down in R.4.1,R.4.2, R.4.3, R.4.4.1, R.4.4.2 and R.4.4.3 are not violated.

R.4.11 (i) Course Withdrawn grade (Ref. 221st meeting of the Senate)

After the last date of course adjustment, a student can drop course(s) till the last date of dropping, as announced in the academic calendar. Such courses will appear in the transcripts and final grade card with a 'W' grade (withdrawn grade). These courses will have no impact on SPI/CPI.

R.4.12: Duration for Dropping of course(s) (Ref. 207th meeting of the Senate)

The last date for dropping a course by the student will be two weeks after the mid-semester examination for the semester-long courses and one week after the mid-semester examination for the half-semester courses. The last date for course drop will be included in the Academic Calendar.

Note :

The student shall complete the prescribed Course Adjustment Form (CAF) and Course Dropping Form (CDF) in consultation with the supervisor/ faculty advisor.

R.4.13 Grade Improvement (Ref 211th Meeting of the Senate)

1. A student in a PG Programme, where minimum CPI for coursework is 6.0, will be eligible for repeating a course for grade improvement if he/ she has a CPI less than 6.0 and has been permitted by PGAPEC to continue in the Programme on Academic Probation.
2. For Grade improvement, a student has to re-register in the course in a subsequent semester if the course is offered. The grade obtained in the re-registered course will supersede the earlier grade and the same will be reflected in the Semester Grade Card and in the Final Transcript.
3. The student can avail this option only for TWO courses in the entire programme and only ONCE for a specific course.

R.4.14 : Transfer of PG level course(s) completed under CEP to Ph.D. Registration (Ref. 210th Meeting of the Senate)

The transfer for PG level courses completed under CEP can be granted if

i) The courses are deemed to be suitable for Ph.D. coursework by DPGC.
ii) The courses have been completed within a period of two years immediately preceding the date of joining the Ph.D. programme.

Such students need to fulfill the residential requirement at the Institute.

5. Course Assessment and Award of Grades

R.5.1 : Grade Points

For every course taken by the student, he/she is assigned a grade based on his/her combined performance in all the assessments. These grades are described by the following letters and corresponding grade points.

AA (10 points), AB (9 points), BB (8 points), BC (7 points), CC(6 points), CD(5 points), DD (4 points), and FF (0 points), FR (0 points), PP (Passed, 0 points), NP (not Passed, 0 points), AU (Passed, 0 points) DX (0 points) and W (0 points). **Minimum passing grade in a course is 'DD'.** Some courses are only associated with PP/ NP grades. In such courses, satisfactory completion is indicated by the award of the PP grade.

The minimum passing grade for all UG and PG courses is DD. **However, PG students should acquire a minimum CPI of 6.00 at the end of each semester**.

All grades (including FR, DX, W etc.) obtained by a student will be mentioned in the transcript. (Ref. 225th Senate Meeting)

R.5.2 : Failure Grades

The letter grades FF and FR shall be treated as failure grades. **Re-examination may be permitted for a course if the student obtains FF grade**. After such re-examination **if the student passes in that course, he/she will be awarded the maximum grade of DD* in that course**. If a student does not take or fails in the re-examination, he/she will be awarded the grade FR. (*Ref. : 167th Senate Meeting).

R.5.3 : Re-examination in a course

A student will be permitted to take the re-examination for a course where he/she has an FF grade provided the number of failed backlog courses (with FR grade) does not exceed the limit permitted i.e. At most two during the entire programme. (Ref. 167th Meeting of the Senate and 182nd Senate).

R.5.4 : Audit Course

The students registered for auditing a course shall be awarded the grade AU if they fulfill the requirement of a minimum of 80% attendance and duly satisfactory in-semester performance as prescribed by the Instructor. The Instructor shall

include such AU grades in the final grade report for that course. **If the student does not qualify for the grade AU, it will be assumed that the course has been dropped** by that student and the semester grade card issued accordingly.

R.5.5 : Additional Learning (Ref : 210th Senate meeting)

The students have an option of taking a course as "Additional Learning" These courses will be in addition to the minimum course credit requirement and will not effect the SPI/ CPI, but the actual grades obtained will be shown in the grade card and transcript. There will be one-time option of changing the tag of a course. Registration for additional courses will require approval of the faculty advisor.

The option of permitting student to register a course as "Audit" is left to the course instructor.

R.5.6 : II grades (Ref : 207th meeting of Senate)

The grade II shall be awarded to a student in a lecture/ laboratory course if he/she has satisfactory in-semester performance and has fulfilled the attendance requirement, but has not appeared for the semester-end examination. The student will be eligible for a make-up for the semester-end examination if the absence was due to medical reasons or extraordinary circumstances. For re-examination, the student will have to apply to the Academic Office. In case of absence due to medical reasons, the application should be accompanied by a medical certificate issued/ authenticated by IIT Bombay Hospital. In case of absence due to extraordinary circumstances, the supporting documents should be submitted. The Academic Office will decide whether re-examination is to be allowed, after consulting with UGAPEC/ PGAPEC (in case of medical reasons) and Dean AP (in case of extraordinary circumstances). In case a re-examination is allowed and is conducted, the instructor shall decide the final grade on the basis of sum of in-semester and the re-examination marks. The weightage of the re-examination would be the same as that of the final examination that the student has missed. In all other cases the II grade will be converted to FR grade.

R.5.7 : Seminar Grades

For the students who have submitted the seminar report in time, but the evaluation of which however could not be completed in time, the Seminar Co-ordinator shall award the grade II and shall forward the grade report to the Academic Office before the end of the semester. All such II grades shall be converted into suitable letter grades in due course of time, before one month following the end of the semester.

R.5.8 : Non-submission of Seminar Report/Absent for Presentation

If a student either does not submit his seminar report by the prescribed date or he/she is absent for presentation on the scheduled date he/she shall be

awarded FF grade unless he/she is given extension by the coordinator under exceptional circumstances.

R.5.9 : Award of Grades in Seminar after obtaining 'FF' in earlier presentation (Ref. 167th Meeting of the Senate).

All students who get **FF grade in Seminar shall be allowed** to complete the evaluation during the period earmarked **for re-examination and will not be given a grade better than the minimum passing grade, DD**.

R.5.10 : Class Attendance Rules

R.5.10.1 : DX grade *(Ref : 202nd meeting of Senate)* - IIT Bombay expects one hundred percent (100%) from its students from all its classes. In keeping with the diversity of demands of time and situation beyond the students control, IIT Bombay requires from every instructor a declaration of one of the following **TWO Options (A, B)** that he/ she would adopt, for the purpose of accounting for the attendance of the student in evaluation of student performance. The option chosen, should be indicated in the course data as registered with the Application Software Cell (ASC). In case an instructor fails to exercise the choice explicitly, **Option A below, would be the default choice.**

Option A: If the attendance of the student, as counted with effect from the first contact hour held after the last date of course adjustment, falls below eighty percent of the total attendance expected with effect from that date, the Instructor would award the student a **'Drop due to Inadequate Attendance', 'DX' Grade** in that course. This 'Drop due to Inadequate Attendance' Grade would, for the purpose of CPI calculation, be treated as **equivalent to a 'Course Drop' carried out on initiation by the student**. In calculating attendance, no specific concession is to be given for lack of attendance on medical grounds; further, if a student has 80% attendance or more, he/ she cannot be awarded a 'Drop due to Inadequate Attendance Grade". This Option should, in the long run, be administered automatically through the Application Software Cell (ASC), once the automated system for attendance can be put in place.

Option B: The Instructor decides and announces in the beginning, a system of **percentage weight** in student performance evaluation in the course, reserved specifically **for attendance and/or class participation**. Penalties in attendance and/or class participation should be reflected only in this component of student performance evaluation. The percentage weight for this 'Class Participation' Component should range **from 0 to 20 percent**. Assigning a zero percent weight for Class Participation automatically implied the earlier Option I –

where there was no penalty for shortfall in attendance. This Option should be administered by the instructor himself/ herself.

R.5.10.2 : Attendance in classes is expected from the very beginning of the semester. The student would be de-registered from those courses in which they were absent in any one of the first three lectures. ***(Ref : 203rd and 208th Senate meeting)***.

6. PERFORMANCE REQUIREMENTS IN COURSE WORK FOR QUALIFIYING TO REGISTER FOR THE PH.D. DEGREE

R.6.1: Required to maintain a minimum CPI of 6.00 at the end of each Semester

The performance of a student in a semester is indicated by a number called the Semester Performance Index (SPI). The SPI is the weighted average of the grade points obtained in all the courses taken by the student during the semester.

Example : Suppose in a given semester, a student has taken five courses having credits C_1, C_2, C_3, C_4, C_5 and his/her grade points in those courses are G_1, G_2, G_3, G_4, G_5 respectively.

Then his/ her

$$SPI = \frac{C_1 G_1 + C_2 G_2 + C_3 G_3 + C_4 G_4 + C_5 G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

SPI will be calculated (after re-examination, if any) on the basis of the final grades awarded AA, AB, BB, BC, CC, CD, DD and FR. The SPI is calculated up to two decimal places.

An up-to-date assessment from the time the student entered the Institute is obtained by calculating a number called the Cumulative Performance Index (CPI). The CPI is the weighted average of the grade points obtained in all the courses taken by the student since he/ she entered the Institute. It is calculated in the same manner as the SPI.

R.6.2: For students with credit requirement of 16 to 22 credits

i) In the first semester, if a student fails in only one course and obtains the grade FF, he/she can avail of a re-examination in that course at the end of first

semester. However, if he/she obtains more than one FF grade or an FR grade, he/she is not entitled for a re-examination.

ii) The credit requirement as prescribed by the DPGC/IDPC/PGC must normally be completed at the end of the first semester but can be extended beyond the first semester if additional courses have been prescribed.

R.6.3: For students with credit requirement of more than 22 credits

i) A student must not obtain a failure grade (FR) for more than one course in his/her entire course programme, else he/she has to quit the programme.

ii) In a semester, if a student fails in only one course and obtains the grade FF, and if he/she has not obtained a failure grade (FF or FR) in the first semester then he/she can avail of a re-examination in that course at the end of that semester. However, if a student obtains more than one failure grade, than he/she is not entitled for a re-examination and he/she has to quit the programme.

iii) In a given semester, if a student fails in only one course and obtains the grade FR (after a re-examination, if any), and if he/she has not obtained a failure grade (FF or FR) in an earlier semester then he/she will register either for the same course or for an alternative course in the next semester, as prescribed by the DPGC/IDPC/PGC.

iv) The credit requirement as prescribed by the DPGC/IDPC/PGC must normally be completed by the end of the second semester.

R.6.4: Students who obtains FF/FR grades as enumerated in R.6.2 & 6.3

All categories of students not fulfilling the requirements as enumerated in R.6.2 and R.6.3 are liable to discontinue their Ph.D. programme. The PGAPEC will take a decision in this regard after reviewing the cases of such students.

R. 6.5 : Additional Qualifier requirement for Confirmation of PhD Registration

Some academic units (departments/ interdisciplinary programmes/ centres/ schools) prescribe qualifying examinations for the Ph.D. programme. These must be completed successfully prior to confirmation of registration.
Currently following Academic Units offers Qualifiers.

1. Chemical Engineering
2. Computer Science and Engineering

3. Biosciences and Bioengineering
4. Mathematics
5. Mechanical Engineering
6. Industrial Engineering and Operations Research
7. Systems and Control Engineering
8. Electrical Engineering
9. Civil Engineering
10. CSRE
11. Energy Science and Engineering

R.6.6: Confirmation of Registration

(a) Students registered under R.4.1 who successfully complete their course credit requirements in one/ two semester shall be granted registration from the beginning of the semester in which they complete the course credit requirements or from the date of joining the programme, whichever is later.

(b) Students registered under R.4.2 or R.4.3 shall be granted registration from the first working day of the semester following the one in which they complete 18 course credits, provided they complete the remaining course credit requirement in the two semesters following the date of registration so granted.

(c) Students registered under R.4.4.2 shall be granted registration on the following basis:

i. For B.E./ B.Tech./ M.Sc./ M.Com./ M.A. or equivalent degree holders, the date of confirmation of Registration shall be one semester from the date of Joining.
ii. For M.E./ M.Tech./ or equivalent degree holders the date of confirmation shall be the date of joining if they complete the course work in ONE semester or one semester from the date of joining if they take two or more semesters for course work.
iii. For M.Mgt./ MBA students the date of confirmation of registration shall be the date of joining, if they complete the course work in ONE semester or one semester from the date of joining if they take two or more semesters for course work.

(d) Ph.D. candidates in the Interdisciplinary programme of Educational Technology should maintain CPI of 7.00 for confirmation of their Ph.D. registration.

R.6.7: Additional courses after the confirmation of Registration (Ref. 168th Meeting of the Senate)

All Ph.D. students may be allowed to register for extra credit courses, after confirmation of registration by following the present rules for confirmation of registration i.e. SPI/CPI above 6.00, etc.

a) The present procedure for confirmation of registration will continue.
b) Extension of registration beyond the duration as specified in the rules will not be considered due to registration for extra credit courses.

R.6.8: Confirmation of Ph.D. Registration Date

Registration dates of all students shall be decided by the PGAPEC. The final approval to the registration shall be granted by the Senate.

R.6.9: Confirmation procedure

The procedure for confirmation of Registration shall be as follows:

i) Each student, on completion of the course requirements and Qualifying Examination prescribed by DPGC/IDPC/PGC shall apply for confirmation of Registration.

ii) The completed application form shall be forwarded by the DPGC/IDPC/PGC to the PGAPEC, which will consider this application and confirm the date of registration according to the rules R.6.1 to R.6.8 above, as applicable.

R.6.10 : Academic Probation to the students having marginally lower SPI/CPI than the minimum required for continuation of their studies (Ref: 184th, 190th and 206th Senate Mtg.)

For students who are identified by PGAPEC as ineligible for continuation of the Doctoral Programmes, the following opportunity is available :

a) PGAPEC will directly offer probation to the students who are found eligible as per the norms defined by PGAPEC, without waiting for the appeal from the student. However, the necessary declarations from the students and their guardians would still be taken as per requirements in a reasonable time, after grant of probation.
b) In some cases, wherein , PGAPEC does not offer Probation to a student, an appeal can be made for probation via DPGC to PGAPEC by the students, which PGAPEC could consider on a case by case basis on its merit.

c) Academic probation will be a one time exercise during the study programme of the students for the period of ONE semester and decided by PGAPEC in consultation with the Faculty Advisor and DPGC's.

d) For the Academic Probation Semester, the students must obtain such SPI as to make his/her **course work** CPI greater than or equal to 6.0 immediately (excluding the dissertation- project work) on including the performance of the semester of Academic Probation. (Ref : 207th meeting of Senate)

e) **Financial Support during the period of Academic Probation in Ph.D. Programmes (New Policy) - (Amended : 198th Senate Meeting)**

   i. The student who are under Academic Probation may continue to be paid Teaching Assistantship/Research Assistantship at the rate applicable to them.
   ii. However, no Teaching Assistantship duties should be given to them on account of the need for them, to concentrate on their academic performance and to improve the same.
   iii. Therefore, these students would be expected to pay Non-Concessional Fees applicable to students of their academic programme.

7. Supervisor/Co-supervisor

R.7.1: Selection of Research topics, areas of Research

In each Department, applicants will be given, at the time of selecting the details of various research topics, areas proposed by various faculty members for Ph.D. programmes, so that they will have an opportunity to discuss those topic areas with the respective faculty members and thereafter, indicate their choice in order of preference. The applicants shall then be interviewed by a committee constituted by the DPGC/IDPC/PGC.

R.7.2: Assignment of Research Supervisor

a) All selected students shall be assigned tentatively to research supervisor(s) at the time of selection. However, a Doctoral (Ph.D.) student may opt to find a supervisor at the end of the first semester, if he/she so desires. The Head of the Department would act as supervisor until the student is assigned to a supervisor.

b) Each external student shall have only one Supervisor in the sponsoring organization where he/she is employed and one or two at the Institute.

c) The Research Programme and the specific area of research of a selected student shall be finalised by his/ her Supervisor (s) after mutual discussion.

All Research Scholars should be finally assigned to Research Supervisor (s) at the time of confirmation of Registration.

R.7.3: Change of Research Supervisor

a) Change of Supervisor(s) under exceptional circumstances shall be permitted on recommendation of the DPGC/IDPC/PGC after obtaining the consent of (i) the student (ii) the present Supervisor(s) and (iii) the proposed Supervisor(s).

b) If the research programme and/ or area of the work requires modification due to this change, the student's entire course programme requirement shall be examined by the DPGCs/IDPCs/PGC. If there is a change in the research programme and/or area of the work, the registration date may be revised, if found necessary.

R.7.4: Arrangement of Temporary Research Supervisor when the Main Supervisor is on leave

a) Whenever a Supervisor leaves the Institute permanently or temporarily for a period greater than or equal to one year, the DPGCs/IDPCs/PGCs shall provide new supervisor(s) for the students being supervised by him/ her before his/her departure.

b) Whenever a Supervisor leaves the Institute temporarily for a period less than one year, the DPGCs/IDPCs/PGC shall make an alternate arrangement for the guidance of his/her students.

c) The DPGC/ IDPC/ PGC may consider continuation of the original Supervisor on his/her return to the Institute, as Co-Supervisor of his/her students depending on the period for which he/she has supervised the Ph.D. Programmes of the students concerned.

d) Any such arrangements made shall be forwarded to PGAPEC for prior approval.

R.7.5: Number of Students assigned to the Supervisor (Ref.: 225th Senate Meeting held on 21-04-2016)

At any given time, the number of Institute research scholars (TAs and/or RAs) working with a supervisor **shall not exceed FIVE.** The DPGC/PGC of the academic unit can decide on the total number of research students of all categories working with him/her.

R.7.6: Research Progress Committee (RPC)
After the completion of the specified course requirements by a candidate, the DPGC/IDPC/ PGC will constitute a Research Progress Committee (RPC) for all candidates in consultation with the Supervisor and Co-Supervisor if any. The RPC will normally consist of the Supervisor & Co-Supervisor (if any) and two other faculty members conversant with the field of research. The Co-Supervisor and/or member of the RPC may be from outside the Institute. (Ref. 136th Meeting of the Senate).

The names of the RPC members and any subsequent changes in its composition shall be communicated by the DPGC/IDPC/PGC to the PGAPEC for record.
Normally one of the RPC member is expected to function as the internal examiner for the evaluation of the thesis.

The RPC is expected to monitor the progress of the candidate until the completion of the programme.

8. Place of work, Progress and Duration

On the recommendation of the Supervisor(s) and the DPGCs/IDPCs/PGCs the Institute may allow the research work for the Ph.D. degree to be partially or wholly carried out at another organization with the following provisions:-

R.8.1: External Organization where a student can carry out the Research
a) The external organization where a student wishes to carry out the research work partially or wholly shall have to be recognized by the Institute before such work is undertaken. **Persons working in Institutions, which are affiliated to Universities where facilities for registration of postgraduate programmes exist are not eligible for registration as external students**. The financial and other implications, if any, of such an arrangement should be finalised at the Institute level. The student, however, shall not be permitted to change his/her student status **(as given under R.1.1)** while working at such an organization.

b) An external organization may be granted recognition by the PGPC as an approved place of work.

i) The recognition shall normally be given only for the purpose of the individual research project by a particular student.

ii) The details of research facilities available at the organisation shall be furnished by the student along with the application for admission to Ph.D. programme.

iii) The DPGC/IDPC/PGC shall examine the details given and may decide either to ask for further information, or even collect first hand information, if necessary, by deputing faculty member(s) to visit the organisation. Only when the DPGC/IDPC/PGC is fully convinced about the adequacy of the research facilities and the credentials of the external supervisor, it shall recommend the case to the PGPC.

R.8.2 : Requirement for Continuation in the Programme/Scholarship

a) **All students registered for Ph.D. irrespective of their category, shall have to register every semester** along with a brief report on the work done in the earlier semester(s) and a plan for the ensuing semester.

b) All candidates, after joining, shall submit, through the supervisor(s), an Annual Progress Seminar of their work in the previous academic year to the concerned DPGC/IDPC/PGC once a year in July/January depending upon the time of admission. For all categories of students, this seminar must be given on or before 31st August or 31st January of each year except for the following :

In case of CSIR/UGC fellows, the dates of their Annual Progress Seminar should be fixed by considering the requirements of the funding agency and such a fixed schedule shall be followed strictly. **(Amended: 179th Meeting of Senate).** Regular research scholars are liable to lose their financial support if the seminar is delayed beyond the said dates. Such seminars are required to be given (every year) until the synopsis and thesis is submitted.

This is also required for enhancement of assistantship and for confirmation/continuation of their programme.

All external students must also give, at least one Seminar per year at the Institute until they submit the synopsis and thesis according to the schedules described above.

The following guidelines are being followed for avoiding delays in the presentation of the Annual Progress Seminar:

1. Every Ph.D. student must present the Annual Progress Seminar as per the prescribed schedule every year.

2. In case, due to some valid reasons, if he/she is not able to present Annual Progress Seminar in time, an application for extension must be made at least 15 days before the due date of presentation.

3. Extension will be granted by PGAPEC on case to case basis with or without fine @ Rs. 750/- per week, from 1st September/1st February as the case may be, till the date of presentation of APS.

4. If the application for late presentation of the Annual Progress Seminar is made after the due date an additional fine of Rs.750/- will be charged for not applying for extension in time.

5. The report of the Annual Progress Seminar in a prescribed format should reach the Academic Office within four days after the presentation.

6. Delay beyond 30th September/28th February (as applicable) may lead to discontinuation/cancellation of Teaching Assistantship and/or Registration.

7. The assistantship for the period beyond the due date of renewal/ enhancement of Assistantship will be released only after receipt of satisfactory report subject to recovery of fine, if any.

8. All Research Scholars, irrespective of their basic qualifications should give Annual Progress Seminars after completion of one year of their date of joining. This is applicable to Research Scholars who have joined their Ph.D. Programme effective from July 2003. (Ref. 167th Meeting of the Senate).

The continuance of registration of all students is subject to satisfactory progress made by them.

The above rules are also applicable to CSIR/UGC fellows. In case of CSIR/UGC Fellows, the date of their APS be fixed by considering requirements of funding agencies and such fixed schedule be followed strictly (179th Senate meeting).

R.8.3 :

a) Every external student shall carry out a part of study pertaining to his/her research work residing at the Institute for a period, which shall in no case be less than one semester.

b) **Residential requirement must be fulfilled in the first two semesters for students with B.Tech./M.Sc./M.A. or equivalent qualification** who have been advised to acquire 18 or more credits.
c) **Students with M.Tech./M.E. or equivalent qualification** who are advised to acquire between 16 to 22 credits have to fulfill the residential requirement **in the first semester only**.
d) Students sponsored by a local Organisation may, on the basis of an application recommended by DPGC/IDPC, be exempted from stay on the Institute campus while fulfilling the requirements under (a) above. However, the work under this rule shall be carried out during normal working hours of the Institute.
e) The organization has to certify that the student has been fully relieved of normal duties/ granted leave during the period of the residential requirement.
f) External students will be provided with hostel accommodation only during the semester(s) in which the residential requirement is fulfilled.

R.8.4 :

All students (except external students) have to carry out research in the Institute for at least a period of **two calendar years from the date registration** before submission of thesis. **External students have to carry out research for at least a period of three calendar years from the date of registration** before submission of thesis.

R.8.5 : Period of Validity of Registration of the Ph.D. Programme

For all categories of students, the period of validity of their Ph.D. registration is six years from the date of registration. The students may submit their thesis before the end of this period subject to the provisions of R.8.4. (199th PGPC Meeting)

R.8.5 a) : Registration of Ph.D. programme beyond Five years

Ph.D. students who have been registered for five or more years in the Ph.D. programme are required to submit a properly completed application on the approval form, for extension of Ph.D. registration to the subsequent year in the Ph.D. programme. This application must be completed and submitted on or before the last date for completing the Annual Progress Examination for the year prior to the year for which extension of Ph.D. registration is required. A penalty of Rs. 750/- per week or part thereof, shall be imposed for any delay in completing this process, beyond this deadline. (Ref. 197th Senate Adjourned Meeting held on 27-01-2010)

R.8.6 : Procedure to be adopted by students for research work involving human participation

Students whose research work involves human participation (either directly or indirectly), should obtain IIT Bombay Institute Ethics Committee (IEC) approval prior to start of the study or the component of the study involving human participation. IEC approval is mandatory for all such projects. In fact, this is mandated by several funding agencies also e.g. DST, DBT, CSIR and ICMR. IEC approval is also a pre-requisite for such research work to be published in peer reviewed journals of repute. IEC approval cannot be taken retrospectively.

R. 9 Synopsis and Thesis submission and Evaluation
(amended on 05-1-2016 : Ref. Senate meeting no. 223rd held on 30-11-2015)

R.9.1 : Pre-synopsis Seminar and Examination

Prior to the submission of the synopsis and thesis, a comprehensive internal assessment of the research work should be made by a panel appointed by the DPGC/IDPC/PGC in consultation with the supervisor(s). The panel must comprise of at least two faculty members other than the Supervisor(s). These will include RPC members.

a) This panel will assess the work through a pre-synopsis seminar and report. The student can submit the synopsis only if the panel is satisfied about the quality and quantity of the work for submission as a Ph.D. thesis.

b) Details of the pre-synopsis seminar will be notified so as to enable interested staff members and students to attend.

c) The Convener of the DPGC/IDPC/PGC will forward the panel reports to the Academic Office in the format prescribed for Pre-synopsis Examinations (Pre-synopsis Report format available on academic homepage). List of Publications/ Conference arising out of the thesis/other outcomes, if any, are to be submitted along with the Pre-synopsis report.

d) Students should submit their synopsis and thesis within four months of the Pre-synopsis seminar date.

e) If the synopsis and thesis are not submitted in the specified period, the student will be asked to present the pre-synopsis seminar again.

f) In case the student fails to submit his/her thesis or fails to present a repreat pre-synopsisis by the due date of completion of 4 months of the earlier date of pre-synopsis presentation, a fine of Rs. 750/- per week shall be imposed. (Ref. 202Nd PGPC Meeting)

R.9.2 : Submission of Synopsis and Thesis

R.9.2.1 : The synopsis & thesis should be written in the approved format (Guidelines available on the academic homepage).

R.9.2.2 : Postgraduate Committee (PGC) should take the concurrence of the Research Progress Committee (RPC) /panel for the pre-synopsis examination of the concerned Research Scholar before accepting the synopsis and forwarding it along with the panel of External Examiners. The RPC/panel for pre-synopsis examination should ensure that the presentation of the synopsis is of an acceptable standard and that the technical contents of the synopsis are representative of the contributions of the Ph.D. thesis being submitted.

R.9.2.3 : Two copies of synopsis should be submitted to the DPGC/IDPC/PGC and 4/5 copies of thesis to the department office alongwith the prescribed forms for submission and certificates from the Accounts Section and the Hostel that there are no dues against the student. After approval of the DPGC/IDPC/PGC, the synopsis will be forwarded to the Academic Office alongwith the forms and the required certificates.

Soft copies (pdf files, with file size less than 8 MB) of the synopsis and thesis should be mailed to <aracad@iitb.ac.in>.

R.9.2.4 Patent is being/ has been filed. (Ref : 207th Meeting of Senate)

At the time of Synopsis/Thesis submission, the Supervisor should select one of the following options for evaluation of the thesis (included in the Form for submission of synopsis & thesis):

1) The thesis evaluation be processed immediately.

OR

2) The processing of the thesis evaluation be taken up after a communication from the Supervisor or SIX months (whichever is earlier), as a patent is being /has been filed and there is a need to maintain the confidentiality of proprietary information.

OR

3) The thesis be sent for evaluation after the Non-Disclosure Agreement has been signed by the examiner, and there is a need to maintain the confidentiality of

proprietary information. The student has been informed that obtaining NDA from prospective examiners may delay the thesis evaluation.

R.9.2.5 : Required Certificates for submission of Synopsis & Thesis (included in the Form for submission of synopsis & thesis)

a) Certificate from the Convener, DPGC/IDPC/PGC that the pre-synopsis seminar examination has been completed satisfactorily.
b) Certificate from the Student and Research Supervisor(s) confirming (i) that there is a prima facie case for consideration of the thesis, (ii) that the thesis does not contain any work which has been previously submitted for the award of any degree except to the extent of collaboration, if any, which may then be specified.
χ) Certificate of authorization from the Research Supervisor(s) for submission of the thesis.
d) Certificate from the Deputy Registrar (Academic) that the prescribed course credits are completed.

R.9.3: Panel of Referees (External Examiners) for Evaluation of Ph.D. Thesis

R.9.3.1 : The DPGC/IDPC/PGC in consultation with the Supervisor(s) will recommend to the Chairman, Senate, a panel of External Examiners (Referees for thesis evaluation) and the names of the Chairperson (2 names) and Internal Examiner for the Ph.D. Viva-Voce.

The examiners (Referees for thesis evaluation) who are currently evaluating another thesis from IIT Bombay should not normally be included in the panel.

The thesis supervisor will opt for one of the following scheme (Scheme A or Scheme B) for submitting panel of external examiners.

Scheme A

- The DPGC/IDPC/PGC will give at least **8** names of external examiners (with at least **4** names from within India) for review of PhD Thesis**.** The academic office will request the external examiners to be reviewers for the thesis and after receiving acceptance, the thesis will be sent to examiners by academic office.

- The **thesis will be sent to only 2 examiners** out of the 8.

Scheme B

- The supervisor(s) of the student will write to potential examiners (approved by PGC of the department) asking them about their willingness to examine the thesis, if requested to by the institute. The draft text for such communication is available on the academic homepage. After obtaining the willingness of the examiners, **4** names of such examiners (with at least **2** names from within India) will be recommended by supervisor(s). The PGC approved list will be then sent to the academic Office.

- **The Thesis will be sent to only 2 examiners** out of the 4.

R.9.3.2 : Selection of Examiners for evaluation of Thesis :

A) From the panel of external examiners duly approved by the PGC, the Chairman, Senate or his nominee will choose **2** names. Additional examiners will be contacted, if the need arises.

B) The referees independently send the thesis evaluation report to the Senate through the Registrar of the Institute. The evaluation includes :

i) A critical survey and evaluation of the quality and quantity of the work as embodied in the thesis.

ii) Questions, if any, to be asked or points to be clarified at the viva-voce examination, and

iii) A definite recommendation as to whether the thesis is acceptable for the award of the degree of Doctor of Philosophy.

C) If a referee in his/her report is not in a position to make a definite recommendation for the award of the degree, he is requested to assist the Senate in deciding whether the student is required to :

ι) Make substantial revisions involving rewriting of one or more chapters without, however, doing any further research work.

ιι) Completely rewrite the thesis, if the thesis, though not acceptable in the present form, reveals sufficient quality and quantity of work to warrant the student being given an opportunity for further research work and/or reinterpretation of results.

D) The Internal Examiner of the Ph.D. thesis will be a faculty member of the Institute, who is a member of the RPC of the concerned student.

R.9.4: Referees Evaluation Reports on PhD Thesis

i) If both the referees recommend acceptance of the thesis as it is (i.e **"a"**), or with clarifications of minor points at the time of the viva voce (i.e **"b"**), the **defence can be held** directly.

ii) If one or both the referees recommend minor modifications in the thesis (i.e **"c"**), the **defence can be held** only after the internal examiner certifies that the changes have been carried out.

iii) If one or both the referees recommend major revisions in the thesis (i.e. **"d"**), the revised thesis should be re-submitted within **6** months after incorporating the revisions to the satisfaction of the supervisors and internal examiner. This will then be sent for further review.

iv) If one referee recommends rejection (i.e. **"e"**), an opinion of a third examiner will be sought.

v) If two referees recommend rejection of the thesis, the thesis in the current form is rejected. In such a case, a new thesis may be submitted only once for review, after 1 year and no later than 2 years from the date of intimation by the PGAPEC, after presenting a pre-synopsis seminar.

Note : The copies of the referee reports will be made available to the supervisor/co-supervisor and the internal examiner, with a intimation to the student.

In case of **(i)** above, the copies of reports will be sent to supervisor(s) and internal examiner simultaneously alongwith the intimation of defence approval.

In case of **(ii) & (iii)** above, the copies of both the reports to be sent to Supervisor/Co-supervisor for ensuring that all the corrections including minor modifications in the thesis suggested by the external referees have been/will be incorporated. After receiving the response of the Supervisor/Co-supervisor, the reports of the referees and the responses of the Supervisor/Co-supervisor will be sent to Internal Examiner to ensure that the corrections including minor modifications, revision suggested by the external referees have been/will be incorporated.

The Supervisor/Co-supervisor and the Internal examiner will submit their response within **7** working days from the date of receipt of the reports/supervisors's response for consideration and approval by the PGAPEC.

The Senate shall, however be the final authority in deciding whether the thesis be accepted for the award of the degree.

R.9.5: Approval of holding the defence and Board of Examiners for Defence

PGAPEC will approve holding of the viva-voce examination (PhD defence) and Board of Examiners for defence.

a) A student whose thesis has been accepted for the award of the Ph.D. degree will defend his/her work at an open viva-voce examination conducted by a Board of Examiners **at the Institute**.

b) An **external examiner,** from among the approved panel of examiners, is **required in the Board of Examiners** for the Ph.D. viva-voce Examination. However, the external examiner could participate in the examination by means of video conferencing in case he/she is not able to be physically present. The Chairperson of the Ph.D. viva-voce examination panel will certify the acceptance of the Thesis and successful conduct of the Ph.D. viva-voce Examination on behalf of the external examiner, when the external examiner participates through video conferencing.

c) The **Board of Examiners** will be appointed by the Chairman, Senate and it shall consists of:

i) A professor of the Institute, outside the department, as Chairman;

ii) The research supervisor(s);

iii) A faculty member of the Institute conversant with the subject to act as the internal examiner; and

iv) One of the referees, who has reviewed the thesis (failing which a referee from the approved panel).

d) The Board of Examiners will submit its report in the prescribed form to the Senate.

R.9.6: Defence Report

a) On satisfactory completion of the viva-voce examination, the degree may be conferred upon the student after approval by the Senate.

b) If a thesis has been accepted but the student fails at the viva-voce examination, he/she may be permitted by the Senate Chairman to re-

appear for viva-voce examination again at a later date. The recommendations of the Board of Examiners conducting the viva-voce examination will be considered in taking a decision in this respect.

R. 9.7 : Submission of Final copies of Thesis

a) After successful completion of the Ph.D. Viva-voce examination, the student will submit to the Academic Office the final bound hard copies of his/her approved thesis, alongwith the prescribed form, **within 2 months,** from the date of defence.

b) If the copies of thesis are submitted after the due date, a **fine of Rs. 5000/-** per month from the due date of submission, till the date of submission will be levied on the student (Ref : 207th Meeting of Senate).

The final transcripts/provisional degree certificate/final degree certificate will be issued only after receipt of the final copies of the Thesis.

10. Teaching Assistantship

R.10.1:
The Institute research scholars will be paid scholarship at a rate in accordance with the directives from the appropriate authorities.

R.10.2:
Institute research scholars are eligible to receive Assistantship for a maximum period of **FIVE** years as communicated by the MHRD **(Revised w.e.f. October, 2014).**

R.10.3 :
a) All Institute research scholars shall apply for enhancement of Assistantship two weeks before completion of two years from the date of joining. They shall submit five typed copies of summary of their work described in five to six pages, to the Convener, DPGC through their respective supervisor(s). A special committee either for each research scholar or for a group of them as may be found convenient, consisting of three or four members, including the Supervisor(s) shall be constituted by the DPGC/IDPC/PGC for this purpose. Each research scholar concerned shall give a seminar before this committee which will assess the candidates' work, progress and make suitable recommendations. The recommendations of the committee along with the application for enhancement of scholarship of the research scholar should be forwarded by the DPGC/IDPC/PGC (comments, if any) to the PGAPEC within two weeks after completion of two years.

b) Subject to satisfactory assessment, the candidates will be eligible for enhanced Assistantship from the completion of two years from the date of joining.

c) If in the opinion of the committee, the enhanced Assistantship cannot be recommended, the committee may stipulate a period of time, not less that three months, for the candidate to re-appear before the committee for the consideration of enhanced Assistantship.

d) Continuation of Teaching Assistantship until the period of entitlement. (Ref. : 191st Senate Meeting)

The Research Scholars with Teaching Assistantship/ Fellowship/ Financial Support routed through the Institute who submit their thesis before the stipulated period of 5 years, may continue to avail of their financial support until the date of their Ph.D. Viva Voce Examination or the end of the period of their entitlement, whichever is **earlier**.

The Head/ Supervisor of the concerned Department may recommend such cases by certifying the needs in consultation with the Ph.D. Supervisor(s).

R.10.4 : Award of Teaching Assistantship to Ph.D. students with B.Tech. from IITs without GATE requirements. (192nd Senate meeting)

Teaching Assistantship will be awarded to the Ph.D students admitted with a B.Tech qualifying degree from the IITs, without GATE requirements, provided the candidates had a CGPA/CPI greater than or equal to 8.00 on a 10 point scale in their B.Tech. Degree.

11. Leave Rules

R.11.1 :

All Research Scholars under TA/RA/SF are entitled for leave for a maximum of **thirty days per year** in addition to Public Holidays. Also **10 days leave** on medical reasons is permitted. The leave due can be carried over to the next year and accumulated **upto 90 days**.

R.11.2 :

Women Scholars are entitled for **maternity leave** at the full rate for a period of not exceeding 180 days, once during the tenure of their studentship. This should be supported by a medical certificate.

R.11.3 :

Male Scholars are entitled for 15 days **paternity leave** once during the tenure of their award. This should be supported by a medical certificate.

The Head of Department/ Academic unit/ Convener of the Interdisciplinary Programme is authorized to sanction the above leave.

R.11.4 :

No vacation in Summer/Winter is admissible.

R.11.5 :

Special Leave to attend Seminars/Conferences in India/abroad to present research papers, with the permission of the **Dean of Academic Programmes, is admissible**.

R.11.6 :

Research Scholars under CSIR/UGC and other categories are governed by the rules of the bodies which provide financial support.

R.11.7 :

Leave rules for M.Sc. +Ph.D. (Dual Degree)

i) Leave rules as applicable for 2 year M.Tech. programme **(note : not two year M.Sc. Programme)** be followed for such students until the point of confirmation of Ph.D. Registration – typically at the end of the fifth semester of the Dual Degree programme.

ii) Ph.D. Leave rules be followed after the point of Confirmation of Ph.D. Registration.

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Update as on : 5th April, 2017