INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Rules and Regulations

2 year M.Sc. Programme

(Applicable from 2018 Batch onwards)

and

M.Sc. + Ph.D.

(direct admission)

(upto completion of M.Sc. program)

Academic Office

2024-2025

July, 2024

Introduction:

Rules are classified into three separate categories as follows: (i) those which may be implemented within a department by DUGC/DPGC, (ii) those that require a decision at the level of A/Dean AP, or UGAPEC/PGAPEC, based on recommendations from the departmental bodies (iii) those that need to be discussed in the Senate for a decision.

Therefore, rules are colored with one of three colors.

1. The color green indicates that the final authority for the rule is the Convener, DPGC.

2. The color yellow, and underlined means that the final authority is Associate Dean(AP)/Dean (AP).

3. The color yellow, without an underline means that the Convener, PGAPEC is the authority.

4. The color pink means that the final authority is the Senate.

5. The rule which is uncolored, is to be implemented strictly.

Any application pertaining to the rule may be sent to the appropriate authority.

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Rules for award of exit degree from M.Tech./MPP/MS by Research and Ph.D. programmee, refer https://www.iitb.ac.in/newacadhome/ExitDegreemtechphd.pdf

PREFACE

The Indian Institute of Technology Bombay (IITB) is one of the Indian Institutes of Technology in the country that are set up with the objective of making available facilities for higher education, research and training in various fields of science and technology. IITB is now recognized as a leader in science and engineering education not only in India but world-wide. It has established a firm foundation for education and research with a high-quality faculty base and having a vision to be the fountain head of new ideas and innovations in technology and science. This booklet provides a comprehensive information on the rules and regulations of the MSc programmes.

1. INTRODUCTION

The two-year M.Sc. programme consists of courses in basic sciences. Each M.Sc. programme broadly consists of core and elective courses spread over four semesters often with a research project component. In general, the first two semesters deal with both fundamental and applied aspects of the respective subject and the later semester gives more emphasis on elective courses providing an exposure to advanced knowledge and an opportunity for a career in research and/or industry. At various stages of the programme, students are initiated into research methodologies, library reference work, use of scientific equipment/instruments, learning of modern computational techniques, writing of technical and scientific reports and effective communication. Apart from the minimum credit requirements for the award of the degree, several opportunities exist for supplementing the learning experience by crediting/auditing additional courses.

Syllabus of various programmes are given in the courses of study Bulletin (CSB) available on the Institute website : http://asc.iitb.ac.in/

1.1 Organizational Structure for Academic Administration

The academic programmes of the Institute are governed by rules and regulations approved by the Senate from time to time. The senate is a statutory and supreme body that governs all the academic matters of the Institute, and the rulings of the Senate Chairperson (the Director) are final in this regard.

The senate continuously assesses the academic programmes and makes appropriate revisions / modifications / improvements through the Post-Graduate Programmes Committee (PGPC) for M.Sc., which is a postgraduate programme. The Dean of Academic Programmes (Dean, AP) is the convener of this committee. The performance of the M.Sc. students is monitored by the Senate through Post-Graduate Performance Evaluation Committee (PGAPEC).

On joining the Institute, students are assigned to faculty advisors from respective academic units. Students are expected to regularly consult the faculty advisor on all academic matters.

1.2 Academic Calendar

The academic activities of the Institute are regulated by academic calendar approved by the senate, and released at the beginning of each academic year. It is mandatory for students to strictly adhere to the academic calendar for completion of academic activities. The academic calendar can be seen at the academic office homepage on IITB website.

1.3 Submission of final year mark sheets/provisional certificates of their qualifying degree by the Master's students

1. All Postgraduate students should ordinarily submit their certificates latest by September / February respectively when admitted in the Autumn / Spring Semester of a given academic year, after joining the Institute.

2. 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 a prescribed from developed for the purpose.

3. 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.

4. Cases of students who do not submit the certificates after the first semester will be reported to the Dean (AP) and the Director for further consideration and decisions/actions.

2. CURRICULUM / PROGRAMME OF STUDY

2.1 Curriculum

Each academic unit running a M.Sc. programme provides a prescribed structure including courses, labs, and other requirements to complete the degree and sets out the nominal semester-wise sequence. Academic courses numbered as 4XX or higher level are treated as PG level courses.

2.2 Course Credit Structure

In general a certain quantum of academic work measured in terms of credits is laid down as the requirements for a two-year M.Sc. degree. A student earns credits by registering and satisfactorily completing the courses and other academic activities in every semester. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly, the credit associated with any of the other activities is dependent upon the quantum of work expected to be put in for each of the other activity per week.

2.2.1. Seminars

Some departments may prescribe a seminar as a requirement. The seminar is treated as a course wherein a student (under the guidance of a faculty member) is expected to do an in-depth study in a specialized area through a survey of published literature, understanding different aspects of the chosen problem, arriving at a status report and

presentation before a panel constituted for the purpose. Seminars typically carry 3 credits.

2.2.2.   M.Sc. Projects (MSP I and MSP II):

Some departments prescribe a project as one of the requirements for the M.Sc. degree. The project is normally done in the third and fourth semesters. Some departments offer it as a choice to students who satisfy the academic criteria laid down by the DPGC. A student doing MSP under the guidance of a faculty member is required to do some

innovative work with the application of knowledge gained while undergoing various courses in the earlier years. The student is expected to do a survey of literature in the subject, work out a project plan and carry it out through experimentation and/or modeling / computation. Through the project work the student has to exhibit skills for both analysis and synthesis. The respective departments prescribe the exact credit structure of MSPs.

2.2.3. Minimum Credit Requirements :

Depending on the discipline, the minimum credit required for award of a two-year degree is between 140 and 160 (Ref. Prof. Mukhopadhyay Committee report).

3. REGISTRATION

a) Along with the credit courses, a student is normally allowed to take a maximum of two curses as audit per semester with the consent of the faculty advisor / project guide, as appropriate.

b) "Any student who registers concurrently for more than one regular fulltime programmes at IIT Bombay OR registers concurrently for a regular fulltime programme at IITB and at any another Institute/organisation, shall be automatically de-registered from all the registered programmes at IIT Bombay." (Ref. 262nd Senate)

c)   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, except for students who are under Academic probation and opt for grade improvement. (Ref. Rule 3.7)

3.1 Semester-wise registration

Registration is mandatory in every semester. The student is expected to discuss with the faculty adviser about the academic performance during the previous semester and then decide the number and nature of the courses to register during the ensuing semester. The faculty adviser may advise a student to drop one or more courses/activities based on his/her academic performance (Sec 4.1-4.3). The faculty adviser may even advise a reduced-load, taking the program over a longer period for students with unsatisfactory performance at the end of the previous semesters / year.

3.2 Procedure for Registration

The Institute generally has an online registration system and the registration is normally done on the first two days of each semester. The registration schedule is announced in the Academic Calendar.

3.2.1 Online Registration

On-line registration process involves filling up of an online Course Registration Form (CRF) stating the courses and project / seminar etc., that the student proposes to complete during that semester as per the prescribed curriculum. This should be done in consultation with the Faculty Advisor, who finally approves the registration. Unless this procedure is completed, registration will not be considered valid.

3.2.2 Late Registration

Only for valid reasons, late registration may be permitted till the date specified in the Academic Calendar, on payment of a late registration fee.

3.2.3 Registration for the first semester

A student is required to register for all the courses listed in the curriculum during the registration process for the first semester.

3.2.4 Registration for second and subsequent semesters

A student may add one more course to acquire more credits (than standard curricula) or to clear backlog courses. Faculty Advisers after careful scrutiny may advise reduced load depending upon previous performance. Every student, however, is required to register for a minimum of 18 credits in any semester.

3.2.5 : Validity of Registration

The maximum period for which the registration of the student shall be alive for four years from the date of original registration of the student.

3.3 Registration for M.Sc. Projects (MSPs)

Registration for M.Sc. Projects (MSPs), is similar to that for any other course. The topics for the project work will normally be assigned towards the end of the second semester by the Project Coordinator of the Department and the work is done during the 4th/3rd & 4th semester. At the end of the first stage, the student is required to submit a preliminary report of his work by a prescribed date (*as per the academic calendar*) to the Co-ordinator and present it to a Panel of Examiners. Registration for second stage is subject to satisfactory completion of the first stage.

3.4 Course Adjustment/Dropping of courses

The Academic Calendar sets a date, normally two weeks after the commencement of the semester, for course adjustment. Students are permitted to make adjustments in academic load by addition or deletion of one or more courses, projects etc, before this date, provided the total credits do not fall below 18 credits, by such adjustments. Course adjustment has to be done in consultation with the Faculty Adviser. A student in the second or any of the subsequent semester from the Faculty Adviser, provided the minimum credit requirements (*18 credits)* is fulfilled. The last date for such drop is given in the Academic Calendar.

3.5 Dropping of a Semester:

1. In all cases of health problems, medical certificate issued by IIT Bombay Hospital is essential. If the medical certificate is issued by other hospitals/private practitioners, the certificates should be duly authenticated by the CMO, IIT Bombay Hospital.

2. In all other cases, requests for dropping the semester should be accompanied by supporting documents as required.

3. A student is not permitted to drop a semester after any of the following; (i) award of DX grade (ii) the end of classes for the semester, (iii) semesterend examination, and (iv) award of grades.

4. If a student drops the semester after the commencement of the semester, the fees paid will not be refunded and/or adjusted in the subsequent semester. Prescribed continuation fee is required to be paid for semester drop.

5. A continuous break from studies exceeding one year is not permitted.

3.6 Registration for Additional Courses

After the first semester, a student with an excellent academic standing may enhance her/his learning experience by registering for one additional course per semester, over and above.

3.7 Grade Improvement

1. A student in a PG Programme, where minimum CPI for coursework is 4.0 (254th Senate Meeting), will be eligible for repeating a course for grade improvement if he/ she has a CPI less than 4.0 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.

Note: The minimum course CPI requirement of 4.0 for continuation in the programme is applicable w.e.f. 2022 batch. For earlier batches, the course CPI requirement for continuation in the programme stands status-quo i.e. 6.0.

3.8 A) Use of NPTEL/SWAYAM courses towards the partial completion of regular academic curriculum (245th Senate Meeting)

(1) Maximum of 12 credits of NPTEL/SWAYAM courses are allowed towards partial completion of the credit requirement of the programme, in lieu of Department / Institute Elective courses. Students, who are on Academic Probation can take these courses also in lieu of Core courses.

(2) Students, who are not on Academic Probation can take NPTEL/SWAYAM courses, in "Additional Learning" mode also.

The above (1 & 2) is allowed only on approval from DPGC.

*B) : Mapping of Grades for courses completed through "NPTEL/SWAYAM" and "Exchange Semester in another Institution" (246th Senate Meeting)

Course(s) completed by student(s) outside IIT Bombay by means of NPTEL and / or SWAYAM and / or Semester Exchange, following due approval of DUGC / DPGC, will contribute only towards completion of credits. Grade(s) earned in such courses will not be considered for the SPI / CPI calculation. The transcripts will record such course(s) and the corresponding grade(s) as it is / they are. The students taking up courses outside IIT Bombay by means of NPTEL and / or SWAYAM and / or Semester Exchange shall be eligible for the award of Medals and Prizes.

C) Credit Equivalence of NPTEL/SWAYAM courses with IIT Bombay courses (249th Senate Meeting):

1) 12 Weeks NPTEL/SWAYAM courses would be typically considered equivalent to 6 credits at IIT Bombay. However, in some special cases, DUGC/DPGC/UGC/PGC may consider and approve 12 weeks NPTEL/SWAYAM course(s) equivalent to 8 credits at IIT Bombay.

2) 8 Weeks NPTEL/SWAYAM courses would be considered equivalent to 4 or 3 credits at IIT Bombay, depending on approval of DUGC/DPGC/UGC/PGC.

(D) : Policy for registering/ award of grades for NPTEL/ SWAYAM/ Semester Exchange courses (Ref. 251st Senate)

1) Registration for NPTEL/ SWAYAM courses: Students may register for these courses during registration window as per Academic calendar for that semester. Faculty Advisor can approve   these registrations in consultation with DUGC/ DPGC.

2) Registration for Semester Exchange Courses: Academic Units may register students for these courses as and when student returns from the FRN Institute, as per approval of DUGC/   DPGC.

3) Grading- As per Academic calendar for that semester along with other courses.

4) The grades for NPTEL/ SWAYAM/ Exchange semester courses will be allotted as they are by   the   head   and   the   interface   will   be   accessible   through <head.*@iitb.ac.in>.

5) If no grades are allotted during the approved window, the course will be removed

automatically from the registration of the students on the last date of Academic Activity, so that there will be no issue in calculating SPI/CPI of the student.

6) ASC will send the reminders to the students for any non-receipt of grades including NPTEL/ SWAYAM/ Semester Exchange courses.

7) An Interface may be created for Departmental offices to view the pending grades of their students.

3.9 Suo Moto Cancellation of Registration in Case of Irregular Semester Registration : (Ref: 241st Senate Meeting)

IIT Bombay follows a semester system, hence registration at the beginning of each semester is mandatory for every student till he/she completes his/her programme of study. If a student does not register in a particular semester without prior permission of the PGAPEC, he/she ceases to be a student and the admission is liable to be cancelled.

Further, if a student does not register for TWO consecutive regular semesters, the admission will be cancelled by the PGAPEC suo moto.

4. SPECIAL FEATURES IN REGISTRATION

The curriculum has special features that a student must be aware of while registering for courses. These include departmental core and elective courses and non-departmental courses. Registration for courses depend on the academic standing of the student, as explained in this section. The registration for backlog courses and audit courses are also explained in this section.

4.1 Clearing backlogs

Students can clear their courses with FF/FR grades by taking the same in a regular semester at the earliest opportunity. The faculty advisors and DPGCs would exercise special care and assist the students in this regard.

4.2 Re-examination

A student will be permitted to take re-examination for FF grades in a given semester provided the number of FR grades not exceed TWO. The re- examination is assigned weightage and is conducted as per a declared schedule after the semester-end examination.

4.3 Audit course

A student wanting just an exposure to a course, without the rigors of obtaining a letter grade, can register a course in 'Audit' mode. A course can be audited provided the course is offered in the semester as a credit course for others, and there is no slot clash. Prior permission of the Instructor is required.

To complete a course in 'Audit' mode, the student has to fulfil the requirement as set by the course instructor, such as submission of assignments and minimum performances in in-

semester evaluations. A course, successfully completed in 'Audit' mode, can not be considered towards the requirement of Minor or Honors.

A student, on successful completion of the requirements of a course in 'Audit' mode, will be eligible for a 'AU' grade. The 'AU' grade carries zero grade point and is not included in SPI/CPI calculations. The 'AU' grade will be shown in the Transcript.

In case a student fails to complete the requirements of a course, registered in 'Audit' mode, instructor will not assign any grade and the student will be de-registered from the course. The same will be deleted from the student's registration, as it will be assumed that the course has been dropped by that student.

PG student can audit maximum TWO courses per semester.

4.4 Course Substitution

In order to complete the degree requirements within the stipulated duration, a student who has obtained FR / DX grades or has dropped courses due to valid reasons, may be advised to substitute courses, by the faculty advisor. An elective course may be substituted by another elective course. Course substitution is not permitted for core courses.

4.5 Summer Registration (Ref. Senate Meeting 235th)

i) Masters students may be allowed to register for courses in the summer semester only under an 'Additional Learning (AL)' tag. Such courses cannot be re-tagged as "Elective", even later on.

ii) Students from the graduating batch are allowed to register for summer courses ONLY to complete any courses from their mandatory curriculum in which they have an active backlog.

Registration for summer courses must be done online and approved by FacAd and A/Dean AP.

4.6 "Gender in the Workplace" - GC 101 Course (PP/NP course) (Ref : 249th & 254th Senate Meeting)

1. This is a non-credit Institute core course having 0 credit. The course is compulsory to all students.

2. No grade points are associated with this course and performance in this course will not be taken into account in the calculation of the performance indices SPI/CPI.

3. The course is on an online mode of delivery and will not be more than 3 hours, at a stretch.

4. The award of degree will be subject to obtaining the "PP" grade in this course.

5. Students are required to complete the course in their first semester.

6. Students who failed to complete the course in the above mentioned time period, will be awarded 'NP' grade which will reflect in the transcripts like any other courses, with 'NP' grade.

7. Students who are not admitted to a degree programme, GC 101 is not a mandatory requirement, such as, HBNI, Visiting students.

4.7 Teaching Assistant Skill Enhancement & Training (TASET) Program – TA 101 (252nd & 255th Senate meeting)
(Applicable to the students admitted under M.Sc.+Ph.D. direct admission programme.)

Overview :

TASET program is designed to introduce TAs to their tasks and responsibilities and enhance their skill set. The program will also guide students in identifying and addressing challenging situations they may face as TAs.

Guidelines for TA 101 :

1. To exclude the following Masters' Programmes from the mandatory requirement : 2 Yr M.Sc., MBA, EMBA, MEng, MDP and e-PGD.

2. To exclude visiting students from this requirements.

3. Only one course TA 101 in the self interactive mode on "Moodle" (same as GC101) to be offered.

4. Grades (PP/NP) for TA 101 to be auto reflected on ADMS after successful completion /non completion.

5. Student will be auto registered/have to register the TA 101 course in their first semester. Students should preferably complete the TA 101 course in their first semester. If not completed, will be auto registered/have to register the course in their next semester, till they complete it and awarded "PP" grade.

6. Students who fail to complete the course or failed in the course, will be awarded 'NP' grade which will reflect in the transcripts like any other courses, with 'NP' grade, till the student completes it and awarded "PP" grade.

7. **Completion of TA 101 to be applicable for all PG and UG DD (B.Tech. +M.Tech., B.Des. +M.Des., B.S.+M.S.) students from batch 2022 onwards.** However, UGTAs from earlier batches who perform TA duty for various UG courses, are required to pass the moodle part of TA 101 to apply for doing TA duty and receive their UGTA-ship from Spring Semester 2022-23 onwards.

8. PhD students (paying non-concessional fees and who joined before 2022) must pass moodle part of TA 101 in order to apply for doing TA duty and seek fee concession. This is also effective from Spring Semester 2022-23 onwards.

9. On non-completion of TA 101 or having 'NP' grade in TA 101 by the student, the continuation of TA duty and release of TA/stipend will be decided by the respective academic units. The student is to be awarded the degree even though the student may not have completed TA 101 or has 'NP' grade.

5. EXAMINATION / ASSESSMENT

Semester-wise assessment of performance of every registered student is done through various modes of examinations. These include quizzes, class tests, home assignments, group assignments, viva-voce, Mid-Semester Examination and Semester-End Examination. **The Instructor will announce the modes of evaluation and distribution of weightage for each of the assessments within the first week of Instruction.** Various modes of assessment for theory and laboratory courses along with the recommended relative weightage of various components are given in this

section. A modification of the recommended modes of assessments and weightages requires prior approval of the Dean, AP.

5.1 Attendance

Attendance in classes is mandatory from the very beginning of the semester. Students who miss even a single lecture from among the first three lectures of a course, are liable to have themselves de-registered from the corresponding course. **(Ref : 203rd meeting of the Senate)**

DX grade *(Ref : 235th meeting of Senate)* - " 'DX' grade is awarded to students who have inadequate attendance as per following : IIT Bombay expects one hundred percent (100 %) attendance from its students. If the attendance of the student, as counted with effect from the first contact hour, falls below eighty percent of the total attendance expected, the instructor may award the student, a **'Drop due to inadequate attendance', 'DX'** grade in that course. For the purpose of CPI calculation, the 'Drop due to inadequate attendance' Grade would, be treated as equivalent to a **'Course Drop'** carried out on initiation by the student. In calculating attendance, no specific concession may be given for lack of attendance on Medical grounds. Further, if a student has 80% attendance or more, he/ she cannot be awarded the 'DX' grade."

The only exception to this rule are courses where the instructor has declared that no DX grade will be awarded.

The instructor may also reserve some weightage upto a maximum of 20%, for attendance and/or class participation.

5.2 Modes of Evaluation for Theory Courses

1. Relative weightage for in-semester evaluations is typically between 50 and 60 percent. This consists of one mid-semester test of two hours duration, of about 25-

   30 percent weightage, and is held as per the schedule fixed in the Academic Calendar. Two quizzes *or one quiz and one test* along with assignments and viva-voce makes up the rest of the in-semester assessment. The Instructor may also set aside up to a maximum of 10 per cent of the in-semester marks for active participation in the class and the initiatives shown by the students. Make-up for any absence from in-semester evaluations like mid-sem/tests/quizzes is at the discretion of the Instructor for genuine reasons.

2. The semester – end examination is held as per the Academic Calendar with relative weightage of 40 to 50 per cent. It is normally of 3 hours duration and covers the full syllabus of the course. **The semester-end examination is mandatory. The instructor awards an "II" grade for those students** for not appearing for the Semester-end examination, if they have sufficient attendance and satisfactory in-semester performance. Such students are eligible for a Semester-end re-examination only on medical grounds or other valid reasons (Sec. 5.8), AND on production of medical certificate issued / authenticated by CMO, IIT Bombay Hospital, or other supporting documents, as the case requires. The application must be submitted to the Academic Office before the last date for registration for such re- examination announced in the Academic Calendar. (See also Sec. 5.8).

5.3 Modes of Evaluation for Laboratory Courses

The assessment in a laboratory course is based on turn-to-turn supervision of the student's work, her/his performance in viva-voce examinations and group discussions, the quality of their work as prescribed through laboratory journals and a semester-end test that contains an experiment or a written examination. In-semester work will normally carry 75% and the semester-end test 25% weightage respectively. It is obligatory to maintain a laboratory journal as prescribed by the course instructor. Final examination for laboratory courses is normally held a week before the final theory examinations. In case of absence from semester-end examination, the same rule as those for theory courses are applicable.

5.4 Modes of Evaluation for Seminars

Seminars are evaluated based on a written report, and an oral presentation before a panel of examiners appointed by the DPGC/Department. The supervisor/co-supervisor (if there is one), is/are part of the panel. Grades carrying grade points are awarded as in the case of theory and laboratory courses based on the quality of the report and performance in the presentation.

5.4.1 Evaluation of Geological core courses

The core courses in geological field training conducted outside campus during winter break are evaluated in the field based on field observations and geological data collection skills.

5.5 Modes of Evaluation for Projects

As described in section 2, the requirements of M.Sc. project (MSP) vary from department to department. Some departments may have it as department requirement for the degree whereas some others may make it optional. M.Sc. project work is normally done in two

stages, each spread over a semester. At the end of the first stage, the student is required to submit a preliminary report of his work by a prescribed due date to the coordinator and present it to a Panel of Examiners. The second stage of the work is continued in the following semester. Project may be offered as one unit as MSP, or two independent units as MSP-I and MSP-II. Departments may prescribe a minimum performance in MSP-I (which may be higher than the pass grade 'DD') for being eligible for MSP-II. MSP-I and MSP-II are separately graded, at the end of the respective semesters. These projects are supervised, and need regular interaction (at least once a week) with the supervisor.

Student is required to submit a project report and defend it in front of a panel of examiners. The dates for submission of reports, the dates for presentations, and details of mode of assessment are decided by the individual departments. Submission of the MSP report cannot be postponed beyond the date specified in the calendar. If the project cannot be completed due to ill health or other bonafide reasons, the course

can be dropped in consultation with the Faculty Advisor, the project coordinator and the guide on or before the last date for dropping of courses. A re-registration for the same is required in the following semester in which it should be completed.

When a student is unable to submit the report for assessment by the prescribed date due to valid reasons, it is necessary to ***make a specific request to the PGAPEC for extension, through the project guide and DPGC, stating (i) the reasons for delay,***
(ii) the expected date of submission (iii) pay the institute fee for the next semester and (iv) formally register for that semester if not done so in the normal course.

If a student neither drops the project in time nor submits the project report for assessment by the due date nor requests an extension from the PGAPEC, the 'II' grade will be awarded at the time of finalization of grades. If the submission of report and presentation / examination are not completed by the end of the Summer Semester, the 'II' grade is automatically converted to 'FR' and would warrant re-registration for the same in the following semester.

5.6 Non-credit requirements

Non-credit requirements are assessed as Pass (PP)/ Not Pass (NP) subject to the fulfillment of the minimum requirements of these activities and a minimum of 80% attendance. The award of degree is subject to successful completion of these activities.

5.7 Grading

For every course taken by the students, he/she is assigned a letter grade on his/her combined performance in all the assessments. These grades are described by the following letters and corresponding grade points.
AP (10 points [Grade is awarded to students with exceptional performance]),   AA (10 points), AB (9 points), BB (8 points), BC (7 points), CC (6 points), CD (5 points), DD (4 points), 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**

i. A student passes the course if he/she gets any grade in the range of AP to DD (AU in the case of an audit course), but fails if he/she gets the grade FF, FR or DX. II and DR are placeholders. II is awarded temporarily on medical grounds and gets converted to an appropriate grade after the Semester end re-examination. On the other hand, DR indicates that the course has been dropped and it has to be cleared in subsequent semesters.

ii. The grade AP indicates exceptional performance and is awarded only in the Course/(s) in which the number of registered students is more than 50. It should not exceed 2 % of the total strength of the particular theory or lab

course. The grade AP is not awarded for projects / seminars.

iii. The letter grades **FF** and **FR** shall be treated as failure grades. Re-examination is permitted for a course if he/she 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.

The students will be given only one chance for re-examination in case of FF grade, otherwise the grade will be converted to **FR**.

FR grade will be awarded in case(s) where, in the opinion of the Instructor (panel of examiners in case of the Projects), the student has inadequate academic exposure to the course/has very poor performance in the in-semester and/or end-semester examinations.

iv. FR grade will be awarded in case/(s) where, in the opinion of the instructor (panel of examiners in the case of projects), the student has inadequate academic exposure to the course / has very poor performance in the in-semester and/or semester-end examinations.

v. The grade DX in a course is awarded if (i) a student does not maintain the minimum 80% attendance in the Lecture/Tutorial classes, or (ii) severely incomplete in semester evaluation record due to non-medical reasons (for example when a student has missed all tests and midsem), (iii) incomplete assignment submissions etc. The DX grade will be declared one week before semester-end examination and intimated to the academic office immediately thereafter. **A student with DX grade in a given course is not permitted to take the semester-end examination. The DX grade is treated as FR for the purpose of CPI calculation, and requires re-registration for the course.**

vi. **"II"** is awarded in a lecture/laboratory course if a student has satisfactory in-semester performance and has fulfilled the attendance requirement, but has not appeared for the semester-end examination due to medical reasons. Such students are eligible for a make up for the Semester-end examination only on medical grounds / valid reasons AND on production of medical certificate issued / authenticated by CMO, IIT Bombay Hospital or other supporting documents as required. The application must be submitted to the Academic Office, for consideration by PGAPEC, before the last date for registration for such make-up examination announced in the Academic Calendar. (See Sec.3.5 and 3.6 for full details). For a student resent in the semester-end re-examination, the instructor will award a regular performance grade (AP-FR) depending on the overall performance in the course including the re-examination. If a student fails to appear for the re-examination too, the instructor will award II grade again. If the absence is due to medical / valid reasons, the student must submit supporting documents as mentioned above, within seven days of the scheduled date of the re- examination, to the Academic Office. PGAPEC will examine such cases and convert the II grade into a

dropped course status (DR) in bonafide cases. In all other cases the II grade will be converted to FR grade. In any case the II grade will not be continued beyond the commencement of the subsequent semester.

vii. There are, however, a few other academic requirements for the Programmes. The following two grades viz., PP (*Pass*) and NP (*Not pass*), will be awarded for non-credit courses. No grade points are associated with these grades and performance in these courses is not taken into account in the calculation of the performance indices (SPI, CPI). However, the award of the degree is subject to obtaining a PP (Pass) grade in all such courses, as part of course curriculum.

viii. **AU** grades are awarded for those who have audited a course, in accordance with prescribed procedure.

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

5.8 Valid reasons for semester-end re-examination

Following may be considered as valid reasons for semester–end make-up examination:

1. Serious illness / personal accident in the case of the student.

2. Serious illness / accident / death of parent / guardian.

3. Logistic problems such as non-availability of resources / lab-facilities / availability of examiner /(s) for project / seminars etc. Students claiming semester-end re-examination (evaluation in the case of projects) on the above valid reasons are required to make suitable application to the PGAPEC before the prescribed last date for registration for such re-examination announced in the Academic Calendar, through proper channel along with proper medical certificate issued / authenticated by CMO, IIT Bombay Hospital. In the event of death and / or serious illness / accident of parent or guardian, the application should be supported by adequate evidence of the same / appropriate documents. Decision of the Convener, PGAPEC is final in these matters.

5.9 Academic Malpractice

Academic malpractices are severely dealt with. The details pertaining to Academic malpractices are available at:
http://www.iitb.ac.in/newacadhome/punishments201521July.pdf

5.10 SPI/CPI

5.10.1 Semester Performance Index (SPI)

The performance of a student in a semester is indicated by a number called Semester Performance Index, SPI. The SPI is the weighted average of the grade points obtained in all the courses registered by the student during the semester. For example, if a student passes five courses (Theory/labs./Projects/Seminar etc.) in a semester with credits C_1, C_2, C_3, C_4 and C_5 and her/his grade points in these courses are g_1, g_2, g_3, g_4 and g_5

respectively, then her/his SPI is equal to:

$$SPI = \frac{C_1 g_1 + C_2 g_2 + C_3 g_3 + C_4 g_4 + C_5 g_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

The SPI is calculated to two decimal places. The SPI for any semester will take into consideration the FR grades awarded in that semester. For example if a student has failed in course 4, the SPI will then be computed as:

$$SPI = \frac{C_1 g_1 + C_2 g_2 + C_3 g_3 + C_4*ZERO + C_5 g_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

The courses, which do not form the minimum requirement of the degrees is not considered for calculation of the SPI. Such additional courses undertaken and the grades earned by the student will be shown separately.

5.10.2 Cumulative Performance Index (CPI)

An up to date assessment of the overall performance of a student from the time s/he entered the Institute is obtained by calculating a number called the Cumulative Performance Index, CPI, in a manner similar to the calculation of SPI. The CPI therefore considers all the courses registered by the student, towards the minimum requirement of the degree s/he has enrolled for, since s/he entered the Institute. The CPI is calculated at the end of every semester to two decimal places and is indicated in semester grade reports.

The CPI will reflect the failed status in case of FR/DX grade(s), till the course(s) is/are cleared. When the course(s) is/are cleared by obtaining a pass grade on subsequent registration(s) the CPI will only reflect the new grade and not the fail grades earned earlier.

Example : Up to semester *r* a student has registered for **n** courses, among which s/he has a FR grade in course **i**. The semester grade report at the end of semester *r* therefore will contain a CPI calculated as:

$$CPI = \frac{C_1 g_1 + C_2 g_2 + C_3 g_3 + ..+ C_i*ZERO +..+ C_n g_n}{C_1 + C_2 + C_3 + ...+ C_i +...+ C_n}$$

Even if a student has failed in a course more than once, the course will figure only once in the numerator as well as the denominator. At the end of semester r+1 s/he has registered for four more courses including the backlog course i and has cleared all the courses including the backlog course, the CPI at the end of this semester is calculated as

$$CPI = \frac{C_1g_1 + C_2\,g_2 + C_3\,g_3 + .. + C_i*g_i + .. + C_n\,g_n}{C_1 + C_2 + C_3 + ... + C_i + ... + C_n}$$

The courses which do not form the minimum requirement of the degrees is not considered for calculation of the basic CPI. These courses are shown separately, and a separate CPI will be calculated for these courses. There will also be a combined CPI calculated which considers all the credits earned by the student.

5.10.3 Transcript : Consolidated Statement of Academic Performance

Transcript is the consolidated statement of the Academic Performance of a student for all the semesters since joining the programme and is given to a student on successful completion of the programme along with the degree certificate. For those students who have taken multiple attempts to clear a course, the transcript given on successful completion of the programme will contain all the earned grades (AP-FR, PP / NP, W); The transcript will show only the year wise overall CPI based on all the courses passed by the student. Additional courses will be shown separately, indicating also the minor / honors, if any, earned by the student. Additional copies of the transcript can be obtained if needed, on request and upon payment of applicable fee. Students who have not yet completed the programme can obtain an **Interim Transcript**, if needed, on request and upon payment of applicable fee. The Interim Transcript includes failed courses, which have not been cleared at the time of issue.

5.11 Disclosing the Evaluated Answer scripts after Semester-End Examination (259th senate meeting)

A course instructor will make arrangement for students to see all evaluated answer scripts, student submissions and other graded material before finalization of grades for theory as well as for lab courses as per dates published in Academic Calendar.

5.12 : End Semester Examination (257th senate meeting)

The semester-end examination is desirable. If the instructor requires any deviation from having semester-end examination for his/her course, he/she should obtain approval from the respective DPGC, giving the justification, before the beginning of the semester.

6. PERFORMANCE REQUIREMENTS

6.1 Award of degree

On successful completion of the prescribed requirements for a programme, the Master of Science degree will be conferred on a student in the annual convocation of the Institute. The degree certificate indicates the relevant science discipline. For example:

'Master of Science in Chemistry'. Along with the degree certificate, the student is given a transcript, giving semester-wise details of all academic accomplishments. The additional courses taken is mentioned in the transcript. An overall CPI for all the academic work done by the student will be given.

For conferment of degree, student has to fulfill the following requirements:
a) The student should have taken and passed all the courses prescribed for the degree under the general institutional and departmental requirements.
b) The student should have satisfactorily fulfilled other academic requirements like practical training, work visits, seminar and projects, as specified for the discipline
c) The student should have paid all the Institute dues and filled convocation form & paid fees.
d) The student should have no case of indiscipline pending against him/her. The transcript and the final degree certificate will not mention any class whatsoever; only the CPI/s will be given in the transcript.
e) The Institute does not award any class or division. However, notionally, the CPI may be multiplied by a factor of 10 to obtain a numerical percentage.

The minimum overall CPI requirement for graduation (with having passing grade in all the courses & projects counted towards graduation requirement) is 4.0. (254 Senate Meeting)

This is applicable from 2022 batch onwards. For earlier batches the requirement stands status-quo i.e. requirement of minimum 6.0 CPI (for continuation and graduation).

6.2 Discontinuation of Programme

1. The student will be required to discontinue the programme if at the end of any semester there are two or more FR grades.

2. At the end of semester, a student must maintain a CPI of 4.0 (254th Senate Meeting) (computed with FR, if any, but after re-examination grade if re-examination is permitted). Otherwise, the student will be required to discontinue the programme.

Note: The minimum course CPI requirement of 4.0 for continuation in the programme is applicable w.e.f. 2022 batch. For earlier batches, the course CPI requirement for continuation in the programme stands status-quo i.e. 6.0.

6.3 Academic Probation : (Ref: 241st Senate meeting)

Academic Probation to the students having lower SPI/CPI than the minimum required for continuation of their studies:

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) It 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.

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 4.0 (254th Senate Meeting) immediately (excluding the dissertation project work) on including the performance of the semester of Academic Probation. (Ref : 207 th meeting of Senate)

Note: The minimum course CPI requirement of 4.0 for continuation in the programme is applicable w.e.f. 2022 batch. For earlier batches, the course CPI requirement for continuation in the programme stands status-quo i.e. 6.0.

7. **Vacation /Leave Rules (232nd meeting of the PGPC)**
   - Students admitted for 2 years master programme are entitled for Winter vacation in December and Summer break (15 days) in their first year.
   - In addition, they are entitled for a maximum of 30 days leave in addition to public holidays, during the entire tenure of the programme.
   - Special Leave to attend Seminars/Conferences in India/abroad with regard to their project work / to present research papers, is admissible as follows.

Event	Duration	Stipend	Sanctioning Authority
* Conference / Seminar	5 working day per semester	Yes	Head of the Academic Unit

* Academic leave in excess of above shall be considered by the Dean (AP) on the recommendation of the Convener, DPGC.

8. MISCELLANEOUS

8.1 Helping weaker students

The students with backlogs are required to register in consultation with faculty advisor. This will require them to meet and discuss their performance with the Faculty Advisor. Such students should continuously seek help from the Faculty Advisor, the student counselor, the student mentors, and the DPGC concerned and keep their

parents/guardians informed about their performance. It is expected that the parents/guardians, especially in the case of students with backlogs, stay in touch with the faculty advisors and if necessary, the student counselor, and keep themselves abreast of their wards' progress.

8.2 Faculty Advisor

The Faculty Advisor is the person whom the parents/guardians should contact for performance related issues of their ward. The role of the Faculty Advisor is outlined below:

1. Guide the students about the rules and regulations governing the courses of study.

2. Advise the students for registering courses as per curriculum given or otherwise within the scope of the rules and regulations set by the Senate from time to time. For this purpose, the faculty advisor has to discuss with the student his / her academic performance during the previous semesters.

3. Faculty advisor has to approve the registration of the students online.

4. Advise students to overload / drop one or more courses / activities based on her / his academic performance as per the prescribed rules.

5. At the end of the first semester / year, the faculty advisor may advise a reduced load programme for a poorly performing student. The reduced load programme may spread over several semesters subject to minimum load for the semester and completion of the degree programme within the prescribed maximum period. The faculty advisor may consultation with the student and her / his parents (if required) and recommend the same to the DPGC for consideration before the commencement of the semester.

6. Pay special attention to weak students and carefully monitor performance of students recommended for slow track option.

7. Advise students seeking semester drop as per the rules and regulations laid down for this purpose and recommend the same to DPGC for consideration.

8. Suggest modalities for course / credit requirements for the students recommended for exchange programme.

9. Guidance and liaison with parents of students for their performance.

10. To ensure that students are not permitted to re-register for courses, which they have already passed.

11. Appraise students that any academic activity undergone without registration will not be counted towards the requirements of his / her degree.

12. Strictly warn students that if s/he fails to register during any semester without prior approval, his/her studentship is liable to be cancelled.

13. Keep the students updated about the Academic Administration of the Institute.

- **Glossary**

  Senate : The Senate is a statutory and supreme body that governs all academic matters of the Institute. The ruling of Chairman, Senate is final in regard to all academic matters.

  DPGC : Departmental Post-Graduate Committee

  PGPC : Post-Graduate Programmes Committee

  PGAPEC : Post-Graduate Academic Performance Evaluation Committee

  FA : Faculty Advisor

  Semester : Two semesters in an academic year, approximately of 16 weeks duration each, the first semester from the last week of July to last week of November and the second semester from the first week of January to the last week of April.

  Summer Term : Approximately of 8 weeks duration from the first week of May to the first week of July.

  Course Credit : Weighted sum of the number of Lecture hours (L), Tutorial hours (T), and Practical hours (P) associated with the course.

  Registration : Semester wise enrollment for courses as per the prescribed curriculum.

  Semester Credits: Sum of credits of courses registered by the student in a semester.

  Credits Earned : Sum of credits earned by passing a course registered during the semester.

  Grade :Qualitative assessment of the student's performance in a course indicated by the letters, AP, AA, AB, BB, BC, CC, CD, DD, II, FF, FR, DX, PP or NP Grade. DX or FR
  indicates that the student has to repeat the course. W indicates course withdrawn.

  Grade point : Number equivalent of the letter grades given by 10, 9, 8, 7, 6, 5, 4, corresponding to AP and AA, AB, BB, BC, CC, CD, and DD, respectively. FR, DX carry zero grade points, PP, and NP do not carry any grade points. II is a placeholder, gets converted to an appropriate grade after semester end re-examination. DR is just a position holder.

  Instructor : Member of faculty who teaches courses/labs.

  Semester Grade Points : The sum of the products of credits and Grade Points for each course registered by a student in a semester.

  SPI : Semester Performance Index which is obtained by dividing the Semester

Grade Points by the Semester Credits.

Cumulative Credits : Sum of the Semester Credits for all the semesters taken together, wherein the credits of a course is not counted if an alternative course has been taken in lieu of it.

Cumulative Grade Points : Sum of the Semester Grade Points for all the semesters taken together, wherein the credits of a course is not counted if an alternative course has been taken in lieu of it.

CPI : Cumulative Performance Index which is obtained by dividing the Cumulative Grade Points by the Cumulative Credits.

Transcript : Consolidated statement of the Academic Performance of a student for all the semesters completed.

- **Course no. Allocation (Ref. 251ˢᵗ Senate)**

The course nos. allotted to any course is the combination of the academic unit code having 2/3 characters (AE, ME, CL, SOM, GNR, etc.) and followed by a 3/4 digit no. [Eg. Of course nos. : AE202; CL321, CH801, EE4004, SOM711, GNR671 etc.]

Allocation of course nos. for Postgraduate (PG) courses : Generally, the course nos. from 500 to 799 are allotted to PG courses, eg. GS 515, SI 505, ME 616, EE 717 etc. These are usually taken by the students of Master's degree programmes.
The course nos. from 800-999 are allotted to PhD courses, eg. CLS 801, CH 820, CH 823, MA 822 etc. These are usually taken by student in PhD programme.
If the nos. get exhousted, in the range of 500-799, then the course nos. be allotted in the range of 5001 to 7999 for PG courses.
There are some Institute level common courses for both Masters' and PhD students, such as : "XX 899 – Communication skills". The course "GC101- Gender in the workplace" is a course common for all the students, UG, PG & PhD.

Allocation of course nos. for Undergraduate (UG) courses: Generally, the courses from 101 to 499 are allotted to UG courses, eg. AE 215, CS 101, ME 316, EE 417 etc. These are usually taken by the students of Bachelors and Dual Degree (Btech+MTech / BDES+MDES) programmes.   If the nos. get exhausted, in the range of 100-499, then the course nos. be allotted in the range of 1001 to 4999 for UG courses.
GC101- Gender in the workplace" is a course common for all the students, UG, PG & PhD.

Allocation of course nos. for common courses for UG and PG both : Generally, the courses nos. from 600 to 699 are allotted for the courses common or UG and PG.

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<u>**Updated as on : 06-11-2024**</u>