

Doctor of Philosophy (Ph.D.) Manual

Version 1.19¹



Indian Institute of Technology Goa

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Preamble

Indian Institute of Technology (IIT) Goa's vision is to become a unique institution of higher learning which shall offer state of the art education, research, and training in science, technology, humanities and social sciences to leave a footprint on society and environment by addressing global and local challenges. The presence of dynamism and the rigour in faculty members at IIT Goa to pursue research has led to the Ph.D. program across various disciplines in the institute. IIT Goa, ever since its inception in 2016 has been establishing modern research facilities and extensively expanding its infrastructural facilities have given a push for the Ph.D. program which was approved by the Senate of IIT Goa in its first meeting itself. The objective of the Ph.D. program is to leave that footprint as envisioned by IIT Goa.

A Ph.D. degree is awarded as a recognition for the achievements of independent research and application of knowledge to the solution of technical and scientific problems. The academic program shall lead to the degree by meeting criteria set by the Senate, IIT Goa. This is achieved by securing credits through course-work and research. The admission to the Ph.D. program is through a centralised process of the institute. Although the students are admitted to certain schools, IIT Goa encourages interdisciplinary research. The institute has been actively involved in various sponsored projects from government as well as industrial support. IIT Goa extends all the facilities for doing path breaking research across all fields of science, technology, humanities and social sciences. The student has access to all facilities within and outside the school in which the student is enrolled. The institute has several Memorandum of Understanding (MoU) signed with various institutes and national laboratories within India and abroad, which allows the student to work elsewhere for part of their research. IIT Goa invites distinguished personalities from different fields and also organizes various events like workshops, symposia and conferences. These events encourage the student to engage in stimulating discussions which will contribute toward their sound development. IIT Goa also extends its support toward non academic development by providing opportunities to explore their extra-curricular interests through various clubs. Psychological and emotional support services are also provided for the needy students. In other words, IIT Goa extends and tries to provide the best possible environment for excelling in the research path chosen by the student enrolling for the Ph.D. program.

This manual is a guiding document for the fascinating journey the student has decided to undertake. The rules and regulations have been laid out with least possible ambiguity. The manual may evolve with changing times as and when necessary. This manual is prepared by the Senate Postgraduate Committee (SPGC) appointed by the Senate, IIT Goa. It has been their best effort to provide maximum liberty to students as well as faculty for a smooth conduct of the program.

Currently running Ph.D. program The Senate, IIT Goa in its first meeting held on 30 January 2018 under the chairperson-ship of Prof. B. K. Mishra approved the Ph.D. program in the following disciplines.

1. Chemistry
2. Computer Science and Engineering
3. Economics
4. Electrical Engineering
5. Language and Literature
6. Mathematics
7. Mechanical Engineering
8. Physics

The Senate, IIT Goa in its 10th meeting held on 6 August 2021 under the chairperson-ship of Prof. B. K. Mishra approved the Ph.D. program in the discipline

9. Materials Engineering

Revision History

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1.17	2021-07-21	SPGC	Amendments to Doctoral Committee (Chapter 4), Comprehensive Examination (Section 5.1), State-of-the-Art Seminar (Section 5.2), Annual Progress Seminar (Chapter 6), and Appendix I; Changed DPGC to PPGC throughout the document. The version approved by the 10th Senate meeting of IIT Goa.
1.18	2021-10-05	SPGC	Amendments to Annual Progress Seminar (Chapter 6). The version reported to the 11th Senate meeting of IIT Goa.
1.19	2022-10-10	SPGC	Amendments to Ph.D. candidacy (Chapter 5) and Research communication, ethics, and methods (Section 3.1.5). The version reported to the 14th Senate meeting of IIT Goa.

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Introduction

This manual gives general guidelines, rules, and regulations for students enrolled in the IIT Goa Ph.D. program. A Ph.D. degree may be conferred on a student subject to the following:

- The student has completed the minimum credit requirements as prescribed by the concerned Academic Units (AUs, see Table 3.1).
- The student has carried out research under the guidance of his/her Doctoral Adviser (s) for at least two years starting from the date of Ph.D. candidacy (Chapter 5).

The student may be permitted to carry out a part of his/her research work outside the Institute in an industry, laboratory, workshop, work site, or other research labs as recommended by the Doctoral Committee (DC) and approved by the concerned Academic Unit (AU). If the student leaves the institute for a period of more than **two months** an approval from the Senate Postgraduate Committee (SPGC) is required (details Chapter 9).

- The student's dissertation must be recommended for awarding the Ph.D. degree by two external referees from reputed universities or research labs and by the Board of Examiners constituted for the *viva voce* (Chapter 7).

This manual follows the new credit hour calculation system¹ (Section III.1) for courses and specifying minimum requirements of the Ph.D. program. Students who are already enrolled may follow the old credit hour calculation scheme for courses; however, mapping to the new credit system based on contact hours is available in Annexure III.

¹The credit system was adapted from the new undergraduate curriculum approved in the 3rd meeting of the Senate held on June 10, 2019, at IIT Goa

Admissions

2.1 Admission categories

Students are admitted to the Ph.D. program through an institute selection process under any one of the following categories:

Full-Time or Regular Ph.D. student

- Teaching Assistantship (TA): Students get fellowship from the institute as per the guidelines by the Ministry of Education
- TA through Project (TAP): Students get fellowship from the research project and partial support from the institute
- Govt./ Semi Govt. Fellowship Awards such as QIP, CSIR-JRF, UGC-JRF, DAE, DST-INSPIRE, DBT, NBHM, etc.
- Sponsored: A student in this category is sponsored by a R&D organization, academic institution, government organization, or industry for doing research in the institute on a full-time basis. The institute does not provide any assistantship/fellowship to such a student.
- Self-financed: A student in this category works full-time or part-time towards the Ph.D. program. The institute does not provide any assistantship/fellowship to such a student.

Part-Time Ph.D. student A student in this category is a professionally employed person (including IIT Goa staff), who pursues the Ph.D. program while continuing the duties of the employment. The institute does not provide any assistance/fellowship to such a student.

- Permanent employees from state or central government universities, colleges, or research institutes and labs
- External: This category refers to a student employed in an R&D organization/academic institution/industry having adequate research facilities. The research work leading to

the Ph.D. degree may be carried out largely in the parent organization of the candidate under a Local Supervisor from the organization but with the overall guidance provided by a faculty member (Institute Supervisor) of the AU in which the student is registered.

- Self-sponsored
- Permanent staff of IIT Goa

2.2 Eligibility for admission to the Ph.D. program

Candidates have to fulfill the requirements set by the institute. These are: At least *First Division* or equivalent in M.A./ M.Sc./ B.Tech./ B.E./ MCA/ M.Tech./ M. Phil. or equivalent degree in appropriate branches. Individual Academic Units (AUs) may use higher cut off levels and/or other appropriate discipline-wise criteria for shortlisting if required. Candidates belonging to reserved categories are eligible for relaxations, as per norms, in the selection criteria.

Registration and credit requirements

- All Ph.D. students should submit their (original) qualifying degree/ diploma certificates (QDC) within **one year** after joining the institute or before obtaining the Ph.D. candidacy, whichever is earlier. However, students must submit their provisional degree/ degree completion certificate (if no QDC available) along with the degree/diploma transcripts at the time of the admission to the Ph.D. program. In this case, the student is admitted to the institute **provisionally** and fellowship will be withheld until the student's admission is confirmed. The provisional admission will be cancelled if QDC is not produced within the stipulated time mentioned above.
 - Students who are unable to submit their QDCs to Academic Section within the due date should apply for extension along with an undertaking stating the new date for submission, giving proper reasons.
 - Students would be allowed to appear in the examination even if they do not submit their QDCs until the commencement of the end semester examination. However, the results of such students shall be withheld until the required documents are produced.
 - Students who do not fulfill the admission requirements (candidates who are awaiting results of qualifying exams) as prescribed by the institute, who have been provisionally selected must submit the provisional certificates within **six months** of joining otherwise their admission will be cancelled.
 - Requirements for respective funding agencies will be applicable to student scholarships
- On joining the Institute every student is assigned to a Faculty Advisor (FA) by the AU in which the student is admitted. The student must plan his/her academic program in consultation with the FA. The student should also identify a Doctoral Adviser (DA) and inform the Academic Office before the stipulated time (details in Chapter 4).
- All enrolled students must register for courses or research at the beginning of subsequent semesters through the institute registration program in consultation with their

FA/DAs. This registration at the beginning of each semester is mandatory for all students, and they must register on the prescribed dates announced from time to time.

- A student is required to register for a **minimum of 12 credits every semester**. If the core and elective courses taken by the student in a given semester are less than 12 credits, the remaining may be taken as research credits (Section 3.2).
- If a student does not register for **two consecutive regular semesters**, the admission will be cancelled *Suo moto* (on its own motion).
- Students must complete the minimum credit requirements through courses and research as described in Table 3.1. Ph.D. students who have been registered for **five or more years** in the Ph.D. program are required to submit an application, for extension of Ph.D. registration to the subsequent year in the Ph.D. program. This application must be submitted on or before the last date for completing the APS for the year prior to the year for which extension of Ph.D. registration is required. The financial support provided to the student will follow the respective rules in place by the funding agency and/or the institute.
- Students are allowed to register for a maximum of **two** audit courses per semester, with the consent of their **FA/DA**.
- A student is not permitted to re-register for a course, which the student has undergone and in which the student has secured an Audit or a Passing Grade (unless it is a course replacement, details Section 8.3).

Qualifying degree	Minimum credits through coursework †	Minimum credits through research †	Minimum credits for graduation	Maximum duration to graduate *
Group A B.Tech., B.E. or equivalent 4-year bachelor's degree	24	54	78	7 years
Group B M.Sc., M.A. or equivalent	18	54	72	6 years
Group C M.Tech., M.E., or M.Phil. or equivalent	9	54	63	6 years

Table 3.1: Minimum credit requirements and expected duration for a student enrolled in the Ph.D. program from various qualifying degree. * from the date of joining. † A student is allowed to complete extra credit courses, if necessary, as recommended by the student's **DA(s)**, **DC**, or **AU**.

3.1 Credit requirements through course-work

Students enrolled in a Ph.D. program must acquire the prescribed minimum credits through coursework (see Table 3.1), which shall be completed:

- within **one semester** from the date of joining by students under Group C (Table 3.1)
- within **the first two semesters** from the date of joining by students under Group A and B (Table 3.1)

However, the duration could be extended with permission from [SPGC](#).

3.1.1 Course registration

- Ph.D. students, after payment of prescribed semester fees, should complete their registration in consultation with and approval of the [FA/DA\(s\)](#).
- Ph.D. students, in consultation with their [FA/DA\(s\)](#), can carry out course adjustments within the time limit provided in the Academic Calendar.
- The Academic Office shall inform the student's [FA/DA\(s\)](#) of any discrepancy in the student's registration. However, students should ensure on their own that they comply with the credit requirements listed under the rules prescribed above.
- Ph.D. students who are unable to commence their course program during the semester in which they have been admitted (due to unavoidable circumstances) may be permitted to commence their course work in the following semester. This is a ONE-time possibility and must be approved by the [SPGC](#) and the Chair, Senate.

3.1.2 Dropping a course

A Ph.D. student may drop courses for which the student may have registered, if the academic load for the given semester is found to be too heavy, in consultation with the student's [FA/DA\(s\)](#), subject to the following

- Students must fulfill the minimum course credit requirements per semester and ensure that the credits requirements laid down in Table 3.1 are not violated.
- The last date for course drop will be in the Academic Calendar
- Dropped courses will appear in the student's transcript with the respective letter grade (i.e. W). Withdrawn grade W will not count towards [CPI](#).

3.1.3 Relaxation from course credit requirements

Normally, all students enrolling for Ph.D. programs have to undergo coursework in order to complete the credit requirements as mentioned in Table 1. However, relaxation in the course credit requirements may be provided on a case to case basis, subject to the recommendation of SPGC and the discretion of the Senate.

3.1.4 Crediting NPTEL or MOOC courses

Ph.D. students are permitted to credit courses from NPTEL or MOOC under special circumstances after the approval from FA/DA(s) and AU.

- Only PG level courses will be considered for course credit requirements.
- The number of credits acquired through the MOOC courses should not exceed 40% (*Individual AUs can lower this limit if needed*) of the total course credit requirements as specified in Table 3.1¹.
- Students must obtain prior approval from their FA/DA(s) and the MOOC or NPTEL cell to register such courses with proper reasoning.
- Students must follow the institute NPTEL cell (and academic office) deadlines and guidelines for course registration, adjustments, drop, completion, and course credits.
- For credit calculation and grading of NPTEL/MOOC course, see Annexure IV.

3.1.5 Research communication, ethics, and methods

- This course is a compulsory course for all Ph.D. students.
- This course carries 3 credits. It is graded as Pass/Non-Pass. No grade points are allocated for the calculation of the CPI. This course is not counted for the minimum course credit requirements mentioned in Table 3.1.
- Students are required to complete this course preferably within two years from the date of their admission to the Ph.D. programme to be eligible for the award of Ph.D. degree.
- Exemption for doing this course may be given to those students who have completed such equivalent course(s) at the graduate level
 - from an IIT, IISER, other reputed institutes/universities in India or abroad, and
 - must have completed such course(s) within five years before joining the institute

¹This limit is applicable for students enrolled in AY 2019 onwards

3.2 Credits requirements through research

Ph.D. students are required to acquire certain minimum credits through research for graduation (see Table 3.1) via research courses.

- *Doctoral Research*: A student is allowed to register for doctoral research credits only after meeting the requirements of Ph.D. registration. One doctoral research unit is equal to 12 credits², subdivided into 4 sub-units of 3 credits each. The grading will be done by the DA (or co-advisor, if the doctoral advisor is not available due to any reason) by the beginning of the next regular semester as defined by the institute. However, the grades of the semesters preceding the APS should be submitted before the APS. The grades of the two semesters preceding APS will be considered final only after the APS (i.e. it is a provisional grade). If there is no communication received by the academic section regarding the grades after the APS, they will be considered final.
- The grading for research credits shall be different from those of regular 10 point grading scheme of IIT Goa. These grades shall not be counted towards the calculation of CPI/SPI (Table III.4).
- For every 3 credits, a grade of S (satisfactory) or U (unsatisfactory) may be given. 3 credits may be equivalent to, but not limited to, 8-10 hours of work per week. Although, U grade may be counted towards the credit hours, but will not be considered for evaluating the research credits earned during the Ph.D. program. Only S grades will be counted towards the required research credits.
- The 12 doctoral research credits shall be graded in four sub-units as SSSS, SSSU, SSUU, SUUU, UUUU. When a student registers with lower credits, the appropriate grading may be done. For example, if a student registers of 6 credits, the grades may be SS, SU or UU. Similarly, if a student registers for 3 credits, the grade shall be S or U.
- During doctoral research a student must secure a minimum of four S in any two consecutive semesters. If a student fails to secure minimum research credits in any two consecutive semesters, the case should be referred to SPGC through DC.
- For completion of the Ph.D. program, a student is required to secure a minimum of 54 credits (i.e. 18 S) through research. However, this is not an upper cap and merely securing 18 S will not make a student entitled to submit a dissertation. The dissertation submission shall be subject to the conditions mentioned in Chapter 7.

²Overloading of research credits may be considered under the recommendations of PPGC/SPGC on a case-by-case basis.

- The credits earned through research³ will be a guiding principle for academic termination/probation/exit degree. Such decisions shall be on the discretion of the Senate, subject to the recommendations of DC and SPGC.
- The grades allotted in the two semesters preceding APS should be presented to the DC. If the grades awarded are not commensurate with the performance in the APS, then the grades may be revised accordingly as per the recommendations of the DC, which should be reported to the SPGC for further action.

Graduate Research A Ph.D. student is also permitted to register for graduate research credits until the student meets the requirements of Ph.D. registration. The student's DA(s) or an IIT Goa faculty may guide such as a course. The student may register for 3, 6, 9, or 12 credits in a given semester for this course. The evaluation for this course is same as the Doctoral Research course. A maximum of 6 credits may be considered towards the minimum research credit requirements for the Ph.D. program.

³Students are allowed to take theory courses approved by DA(s) after the Ph.D. registration, which will be counted as S, if the students acquires the minimum required grade (Section 8.1) in such courses (considering credit hour mapping). This is solely for satisfying the minimum requirements for an academic year and/or the Ph.D. program.

Doctoral committee

Doctoral Adviser (DA) For students under

- Group B and Group C (Table 3.1), the process of DA allocation should be completed within the first three months of their joining the institute,
- Group A (Table 3.1), the process of DA allocation should be completed within one year of their joining the institute,

as per the policies laid down by the AU.

Doctoral Committee (DC) The DA(s) in consultation with the student, shall form the Doctoral Committee (DC) well before the comprehensive examination of the student (Section 5.1). The committee shall comprise the following **five** members.

- The doctoral advisor (DA)
- Two faculty members from the student's AU
- One faculty member from the institute (outside the student's AU) who is conversant with the subject
- One expert from within or outside the institute

The student's co-doctoral advisor (co-DA), if any, will be considered as an additional (6th) member.

The DC shall be chaired by any other member other than the DA. The DA is the member convener of this committee. The constitution of a DC should be recommended by the respective AU's Postgraduate Committee (i.e. PPGC)¹ and it will be forwarded to the Office of the Dean (Academic Programs). The DC is approved by SPGC. DC's roles include but not limited to

- Monitor whether a Ph.D. student is in *good standing* in terms of coursework and research throughout the program

¹or the respective AU, if no PPGC is in place for the program

- Sets *additional* research and publication requirements (additional to what is specified here in this Ph.D. manual)

Change of DA (s) If a situation arises where a student requests for changing the DA or a faculty makes a request to relieve the student and another faculty of the institute agrees to supervise the student, then the student may be transferred with the approval of the Chair, Senate.

- Under these circumstances the DC may be reconstituted **within a month** of the approval of the change of DA
- If the area of research requires modification due to this change, the student's entire course work requirement shall be examined by the DC. The student's Ph.D. candidacy may be revised, if found necessary.
- The State Of the Art Seminar (*cf.* Section 5.2) may be given again, if it is set mandatory by the respective AU. In such a case, the student has to complete the requirement within **four months** of the approval of the new Doctoral Committee or the approval of the change of DA, whichever is later.
- In case no faculty member is willing to take the student, then the student will have to exit (Section 8.5) or leave the Ph.D. program.

Ph.D. candidacy

A student obtains Ph.D. candidacy, i.e., the confirmation of Ph.D. registration, only after the successful completion of the comprehensive examination (Section 5.1) and minimum course credit requirements (e.g. see Chapter 3; Table 3.1).

5.1 Ph.D. comprehensive examination

Ph.D. Comprehensive Examination is mandatory for every student to complete the Ph.D. registration. This exam typically evaluates a student's preparedness to conduct doctoral research. The should be successfully completed within **six months** after the completion of minimum course credit and **CPI** requirements. SPGC may grant an extension in unforeseen cases up to **two months** in total, under the recommendation of the student's program/PPGC.

DC of the student will manage the exam. The mode of Comprehensive Examination (oral, written, or both) as well as the modus operandi is decided by the student's **AU** and is intimated to the students. Students will be informed at least one month prior to the date of examination.

A student failing in the exam in the first attempt may be given one more chance. However, students must successfully complete the exam within the stipulated time frame. If a student fails to do so, the student will be exited/terminated from the Ph.D. program. **DC** will submit the report of the examination(s) to the Academic Office within **two weeks** of conducting the examination(s).

5.2 State of the Art Seminar (SOAS)

SOAS may be an additional requirement for the Ph.D. program set by the respective **AU**. If the **AU** mandates **SOAS**, it should be completed **within six months** of the successful completion of the Comprehensive Examination. **SOAS** will be conducted under the guidance of **DC**. If the first **SOAS** is not satisfactory, the student is required to present another **SOAS** within a month (or as prescribed by the **DC**).

The respective AU's PPGC may consider requests to extend the deadline of the SOAS in unforeseen cases up to **two months**. A student will get a maximum of **two chances** to complete the SOAS requirements set by the respective AU. If a student fails to complete the SOAS requirements set by the host program, the student is liable to be terminated from the Ph.D. program.

Annual progress seminar

After completing the Comprehensive Examination (Section 5.1), every student enrolled in the Ph.D. program, including part-time students, must appear for the Annual Progress Seminar (APS).

- The students enrolled in the Autumn semesters will present their APS every June/July, and students enrolled in Spring semesters will present their APS in December/January. If State of the Art Seminar (SOAS) is a mandatory requirement of the student's program,
 - then SOAS may be considered as the 1st APS if it coincides with the normal time of the APS schedule.
 - otherwise, the student must present APS whenever the student is due after the SOAS.
- If the student cannot present APS according to the schedule, an application for extension must be made **at least 15 days** before the due date to the academic office. Such requests will be considered on a case-to-case basis.
- If the performance is found to be unsatisfactory for the assessment period, the student may be asked to repeat APS **within six months**. If **two consecutive APS are unsatisfactory**, the student may be terminated with or without a lower degree (see Section 8.5). The decision in such incidents will be decided on a case-to-case basis.

APS is open to all in the student's school or program. In addition to the seminar, the student shall also submit a report to the doctoral committee (DC) at least **ten days before the APS**. The DC will review the APS. The DC shall submit a report to the head/coordinator of the AU. The APS report will then be forwarded to the Academic Office **within a week** from the APS date.

The rules described here are also applicable to students who get external funding agencies' support. The APS date of such students may be fixed by considering the requirements of the

funding agencies. An additional member from other institutes may be invited for evaluation if mandated by the funding agency.

APS may also be required for enhancement (or continuation) of any financial assistantship from the institute.

Submission and evaluation of synopsis and dissertation

7.1 Pre-dissertation seminar

A Ph.D. candidate is required to present his/her research work before the submission of synopsis. This seminar is open to all IIT Goa. The procedure is the following.

- The student must submit a report to the student's **DC** at least **seven days** before the day of the pre-dissertation seminar.
- A positive report from the **DC** will make the candidate eligible to submit the synopsis to the **PPGC/SPGC**. The synopsis—an extended summary of the dissertation¹—should be submitted within **three months** of the pre-dissertation seminar to the **PPGC/SPGC**. After the **PPGC/SPGC** has approved the synopsis, the candidate will have to submit the dissertation, within **a month** of receipt of the **PPGC/SPGC** report.
- After the approval of the synopsis, the student's **DA (s)** in consultation with **DC** will submit a confidential list of **eight** potential **external** examiners
 - Guidelines to prepare the list of examiners are set by the institute in consultation with **SPGC**. For example, examiners should be at the level of Assistant Professor (or equivalent) or above, half of the examiners should be international examiners, etc.
 - The list of examiners should be recommended by the **AU/PPGC** and **SPGC**, and finally approved by the Chair, Senate. The Chair, Senate may also decide the order in which the examiners are contacted by the Academic Office.
- On unsatisfactory performance in the pre-dissertation seminar, a candidate may be asked to give another seminar within six months of the first seminar.
- If the synopsis and dissertation are not submitted within the stipulated period mentioned above, the Ph.D. student will be asked to present the pre-dissertation seminar again.

¹This will be sent to potential external referees along with the request to review a dissertation.

7.2 Submission of synopsis and dissertation

The dissertation and synopsis in the prescribed format are to be submitted to the Academic Office along with the following certificates for submission.

- Approval from the DC and PPGC for submission of the dissertation.
- Certificate from the Ph.D. student and DA (s) confirming that
 - there is a *prima facie* case for consideration of the dissertation
 - the dissertation 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.
- Certificate of authorization from the DA (s) for submission of the dissertation.
- Undertaking/Report of the plagiarism check
- The Academic Office will check the prescribed course credits are completed (Chapter 3) by the student.

7.3 Evaluation of dissertation

- Two external examiners will evaluate the dissertation.
- The Academic Office may communicate to external examiners, from the list of approved examiners suggested by DC, for evaluation of dissertation within **one week** of the approval of the synopsis. The synopsis will be sent to the examiners.
- There is a need to maintain the confidentiality of proprietary information².
- Examiners should inform (the Academic Office) the acceptance to evaluate the dissertation within fifteen days of communication.
 - If no reply is received, a reminder may be sent on the sixteenth day.
 - If no reply is received within one week, then the Academic Office will approach other examiners.
- In the event all the examiners suggested by DC refuse to review the dissertation (or insufficient number of evaluators as mentioned above), then the DC may suggest a new list of examiners in consultation with PPGC/SPGC. It has to be then approved by the Chair, Senate.

²It will be clearly mentioned in the cover letter.

- Names of the referees/examiners will be disclosed to the DA after the reports are received. The referees' names will be anonymous to the student until the reports are received.
- On positive reports by the two referees (see the next subsection for details), the Ph.D. defence may be held.
 1. If all the referees recommend acceptance of the dissertation as it is, or with clarifications of minor points the defence can be held.
 2. If any of the referees recommend minor modifications in the dissertation, the defence can be held only after the internal examiner certifies that the changes have been carried out.
 3. If at least one of the referees recommend major revisions in the dissertation, the revised dissertation should be resubmitted within six months after incorporating the revisions to the satisfaction of the DC. The revised dissertation must be sent for further reviews to all examiners who have examined the dissertation (and follow Steps 1–5).
 4. If any referee recommend rejection of the dissertation, an opinion of the third examiner may be sought, and defence may be held upon positive recommendation of the third examiner.
 5. If all the referees recommend rejection of the dissertation, the dissertation in its current form is rejected. Under such circumstances, the candidate is required to carry out necessary changes and do additional work, if needed. The candidate shall be allowed to submit the dissertation only after one year of receipt of the reports. This period shall not exceed two years from the date of intimation by the academic section. The routine process of dissertation evaluation may be carried out as for dissertation submission.

Referees' evaluation reports on Ph.D. dissertation

The examiners should send the reports addressed to the Dean (Academic Programs). After receiving the report from an examiner, PPGC/SPGC will classify the examiner's report in one of the following categories.³

Category A If the corrections reported by an examiner are related to the language, such as, grammar, spelling, punctuation, typographical errors, etc., the DA (s) or the internal examiner can use their discretion regarding incorporation of such suggestions.

³This classification can also be specified in the forms that we send to the referees so that the examiners can give their views.

Category B If an examiner points out minor technical mistakes, raises some queries or suggests modifications but does not imply that the acceptance of the dissertation is subject to removal of these defects to the examiner's satisfaction, the **DA** (s) will communicate the student's response to the above to the **PPGC/SPGC**, and the same will be incorporated in the dissertation to the satisfaction of the defence committee. In case the examiner (s) have asked for the corrections incorporated in the dissertation based on their suggestions, the examiner (s) concerned should be informed of the changes made.

Category C If an examiner

- (i) outrightly rejects the dissertation or
- (ii) raises technical points or suggests modifications

which must be answered/carried out to the examiner's satisfaction before the dissertation is accepted, the **DC** (s) will communicate to the **PPGC/SPGC** the changes made in the dissertation, if any, in response to the examiner's comments along with an explanatory note which will be sent to the examiner⁴ with a request to respond within **six weeks**. If the examiner's response is not received within this period, reminders will be sent and if no reply is received within additional two weeks time, other referees will be contacted from the list of examiners, if needed.

7.4 Dissertation defence

Constitution of the defence committee The committee shall comprise

- the Chair, who is a faculty member from a different AU and not part of the **DC** of the candidate, appointed by the Chair, Senate.
- an internal examiner (may be a member of **DC** other than **DA** (s))
- one external examiner (usually the one who has evaluated the dissertation)
- the student's **DA** (s)

The defence committee shall be constituted by the Chair, Senate on recommendation from the **SPGC**.

⁴Only if the examiner wish to see the changes. Referee in Category C(i) may opt not to review the dissertation again. The forms to be send to collect referee feedback will clearly specify these implementation aspects.

Ph.D. defence The defence committee shall decide upon a suitable date and time for the defence, which should be announced suitably at least one week before. Students will defend their work at an open (it's open to the institute faculty and students) *viva voce* examination conducted by the defence committee. The defence may be held in online mode as well, if in person meeting is not possible.

The defence committee will submit its report on the *viva voce* examination in the prescribed format to the **SPGC**. In case of unsatisfactory performance of the student in the defence, the defence should be held again with the approval from the Chair, Senate.

Defence report The student will submit the final dissertation copy in electronic format, after duly incorporating the suggestions/corrections from the defence committee and external examiners, to the student's **DC** (s), within one month from the date of defence. This file should include the signed copy of the approval sheet.

Performance requirements and remedial tools

Students are expected to produce high-quality research and exhibit superior academic performance. This section only provides minimum performance requirements and remedial tools to improve performance.

8.1 Minimum CPI requirements

Students must maintain the minimum Cumulative Performance Index (CPI, see Annexure I) of **6.5 out of 10** at the end of every semester. Individual AUs can set a high value for the minimum CPI requirements. If they do not maintain the minimum CPI requirements, they will be in Academic Probation, and the remedial measures are discussed in Section 8.4.

Grade points less than five in any course For the evaluation of CPI, a student has to secure a minimum grade point of 5. Students getting less than the minimum grade point 5 must repeat/replace the course with another, subject to meeting other requirements of the Ph.D. program.

8.2 Failure on courses

- A student is not allowed to have more than ONE Failure grade (i.e. F or FF, See Tables III.3 and III.4) in the student's entire Ph.D. program. However a student has to secure the minimum credit requirements for a semester (Section 8.1).
- If a student fails more than one course, the student is liable to Exit from the Ph.D. program (Section 8.5).
- If a student fails in only ONE course, the student can
 - avail of a re-examination in that course at the semester end (If the instructor agrees) or
 - register an alternative course as per the guidelines set by the SPGC

- If the student continues, the student will be in academic probation in the following semester unless the student secures the minimum credit and CPI requirements for a semester (Section 8.1).

8.3 Grade improvement

A student who fails to maintain the minimum **CPI** requirements will be allowed to repeat the course or replace a course for grade improvement, subject to meeting other credit requirements of the Ph.D. program (Section 3.1).

- The course may be repeated if the student fails to get the minimum allowed grade for a graduate course.
- The student must re-register the course that the student wishes to repeat in a subsequent semester if the course is offered or an alternative course available.
- The student's **FA/DC** must approve this grade improvement plan before registering the replacements courses. The student cannot replace a course with another course that is *already completed* with the minimum allowed grade for a graduate course (e.g. 'C' grade) or above.
- The grade obtained in the re-registered course will supersede the earlier grade for **CPI** calculation and the same will be reflected in the semester grade card; The final transcript contains all courses taken by the student.
- A student can avail of this option only for TWO (2) courses in the enrolled program and only ONCE for a specific course.
- Students must complete grade improvements within the stipulated time for the completion of the minimum credit requirements of the Ph.D. program (Section 3.1).

8.4 Academic probation

A student will be put on academic probation for a maximum of one semester if the student fails to meet the minimum **CPI** requirements

- The student will be granted academic probation with immediate effect if the **CPI** requirements are not met in the given semester.
- Academic probation will be reported to the Senate, through **SPGC**.
- At the end of the semester in which the academic probation is granted, the student must obtain a **CPI** greater than or equal to the minimum CPI requirements

- After one semester of academic probation, if the student fails to achieve the satisfactory performance the student is liable to Exit from the Ph.D. program (Section 8.5)
- Any concession or fee waiver is not applicable to Ph.D. students during the period of Academic Probation
- Institute may relax TA duties of such students to enable them concentrate on their academic activities.
- Students are not allowed to represent the Institute in extracurricular activities or contest in student body elections during the period of probation.

8.5 Termination/Exit from the Ph.D. program

Termination A student may be terminated from the Ph.D. program without any degree, if

- the student concurrently registers for any academic program. This is with immediate effect.
- the student takes an employment at another organization without converting the Full-time Ph.D. program to an appropriate Part-time Ph.D. program (Section 2). This is with immediate effect. However, the student may be permitted to seek employment after completing the pre-dissertation seminar with approval from SPGC.
- the student's academic or research performance is poor, as described in any of the performance measurements above or as identified by the concerned DC or SPGC.
- the student fails to successfully complete the comprehensive examination or qualifying examination (Section 5.1)
- violation of the code of conduct of the institute

Exit Rules and regulations for the exit from the Ph.D. program as follows. Note that *exit* differs from *termination* in the sense that the former may facilitate in getting a lower degree/diploma (See Table 8.1).

- The exit with a lower degree/diploma shall not be the right of the student. However, if the concerned DC and/or PPGC recognizes sufficient work done deserving such consideration, and recommends exit with a degree, SPGC may consider it and requests for the Chair, Senate's approval
- If the Chair, Senate approves awarding a lower (Exit) degree (Table 8.1) per se means that the student would be eligible for such a lower exit degree with immediate effect. The student will automatically be registered to the lower degree on approval of

SPGC without any applications from the student. However, the continuation of such registration shall be subject to payment of fees and other necessary conditions.

- The student may be given up to six months to complete the requirements for the award of a lower degree.
- Failure to comply with all requirements for the exit degree within **six (6) months** of conversion may lead to termination from the exit degree.
- Any financial implications due to exit from the PhD program will be decided by respective funding agencies.
- Eligibility requirements for different exit degree/diploma. Satisfying the requirements alone do not guarantee any such degree.
 - **Master of Science (M. S.) by research:** On successful completion of course credit requirements (e.g. a minimum of two semesters of course work) and research work requirements (more than the M. Tech. thesis requirements). This option is typically considered when the student is a confirmed Ph.D. student and well advanced in the program.
 - **Master of Science (M. S.) by course work:** On successful completion of course credit requirements (equivalent to or more as specified in the M. Tech. manual; for example, the student may require **at least three semesters** of course work) and/or research work requirements.
 - **Postgraduate Diploma (PgD):** On successful completion of course credit requirements for **at least two semesters**.

S/N	Ph.D. discipline	Exit degree/diploma*
1	Computer Science and Engineering	
2	Electrical Engineering	
3	Mechanical Engineering	M.S. degree or
4	Mathematics	Postgraduate
5	Chemistry	Diploma
6	Economics	
7	Language and Literature	
8	Physics	

Table 8.1: Possible exit degree/diploma options. * See the text for the respective eligibility requirements.

Leave rules

Students may be granted leave upon recommendation from the [FA/DA](#) and application through the concerned AU. Applications must be submitted well in advance of the date of commencement of the leave requested. Dean (Academic Programs) is the competent approving authority for all the leaves mentioned below.

Students enrolled under [CSIR](#), [UGC](#), and other categories are governed by the rules of the bodies which provide financial support. Leave rules of the parent organization are applicable for Part-time students.

9.1 Personal Leave and Casual Leave

Students funded by the Ministry of Education or Institute are entitled for leave for a maximum of 30 days per calendar year in addition to the Public Holidays. The leave will be treated as part of the student's tenure. The leaves due can be carried over to the next year, however not more than 90 days can be accumulated at any time during the entire tenure. During the first year of fellowship or for any uncompleted year, leave may be accounted on a pro-rata basis for the completed months. Leave account of the students enrolled shall be credited with leave in advance in two instalments on the first day of January and July for every completed calendar year considering that the maximum number of leaves available is not more than 90 days at any point of time.

9.2 Maternity and Paternity leave

Maternity and paternity leave would be available to female and male students as per Government of India instructions issued from time to time¹.

¹Details are available in IIT Goa Statutes

9.3 Medical Leave

Leave on medical grounds, duly supported by a medical certificate (from the IIT Goa medical section), may be granted to a student for up to 10 days per calendar year. Such leaves not availed will not be carried over to the next year.

9.4 Academic Leave

Academic leave would be available to students to attend seminars, conferences, workshops in India or abroad to present research work. The duration of academic leave includes the transit time, which is calculated on the basis of travel time from the institute to the place of the event. The academic leave may be given up to **six weeks**.

9.5 Absence without sanctioned leave

Student's absence without sanctioned leave

- will entail loss of the student's financial assistantship for the period of absence, and
- may result in the termination of the student's program on the recommendation of the concerned AU and approval of [SPGC](#).

Miscellaneous

10.1 Change of status from Full-time to Part-time

A Full-time Ph.D. student is not allowed to take any positions unless assigned/approved by the institute. However, a Full-Time Ph.D. student may be allowed to convert to Part-Time Ph.D. with the approval of the Senate.

10.2 Guidelines for research work involving human participation

Ph.D. students whose research work involves human participation (either directly or indirectly), should obtain the Institute Ethics Committee (IEC) approval prior to the 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 such as DST, DBT, CSIR, and ICMR. IEC approval is also a prerequisite for publishing any such research work. IEC approval cannot be taken retrospectively.

Requirements for students enrolled before AY 2021-2022

The Ph.D. manual is applicable in spirit to all students enrolled for the Ph.D. program at IIT Goa. Meanwhile the rules are applicable to all the students enrolled for the Ph.D. program, certain amendments to the rules and regulations are recommended for the students enrolled for Ph.D. program during the academic years 2018-2019, 2019-2020, and 2020-2021. The deviation from rules for such students are detailed below.

Credit requirements from coursework (Section 3.1) The students enrolled in the academic years 2018-2019, 2019-2020, and 2020-2021 shall have to meet the credit requirements as tabulated in Table I.1.

Qualifying degree	Minimum credits through coursework †	Minimum duration to graduate *	Maximum duration to graduate *
Group A			
B.Tech., B.E. or equivalent 4-year bachelor's degree	44-56	3.5 years	7 years
Group B			
M.Sc., M.A. or equivalent 5-year Master's degree	32-46	3 years	6 years
Group C			
M.Tech., M.E., or M.Phil. or equivalent 6-year Master's degree	16-22	2.5 years	6 years

Table I.1: Minimum credit requirements and expected duration for a student enrolled (before AY 2021-2022) in the Ph.D. program from various qualifying degree. * from the date of joining. † A student is allowed to complete extra credit courses, if necessary, as recommended by the student's DA (s), DC, or AU

Crediting NPTEL or MOOC courses (Section 3.1.4) The grading system proposed in the manual shall be applicable for all courses the students shall enroll for after this manual comes into effect. The courses that have already been graded shall remain unchanged.

Credit requirement through research (Section 3.2) There shall be no minimum credit requirement through research for students enrolled in the academic years 2018-2019, 2019-2020, and 2020-2021. From the academic year 2021-2022 all students irrespective of the year of enrollment shall register for 12 credits every semester and they shall be graded as detailed in Section 3.2. The waiver is only on the minimum research credits to be earned (i.e. 54 credits or 18 S). All other rules of doctoral research shall be applicable.

Minimum CPI requirements (Section 8.1) The students enrolled before 2021 shall have to secure a minimum CPI of 6.0 out of 10 in order to fulfill the course work requirements for registration to the Ph.D. program.

Academic probation (Section 8.4) The students enrolled in the academic years 2018-2019 shall be governed by the existent rules of probation during the years 2018-2020.

Formation of doctoral committee (Chapter 4) For the students who enrolled in the academic years before 2021-2021, doctoral committees shall be amended based on this Ph.D. manual.

Ph.D. comprehensive examination (Section 5.1) If the students enrolled in the academic years 2018-2019, 2019-2020, and 2020-2021 have had satisfactory performance during an APS or appeared for any equivalent examination conducted by the respective academic unit or doctoral committee, then that shall be considered as successful completion of Ph.D. comprehensive examination. If the student enrolled in these years, has not appeared for any such scrutiny, then they will have to appear for a Ph.D. comprehensive examination as per the existing rules of the academic unit.

State of the Art Seminar (SOAS, Section 5.2) If the students enrolled in the academic year 2018-2019 have had satisfactory performance during an APS or appeared for any equivalent examination conducted by the respective academic unit or doctoral committee, then the SOAS is waived off for such students. AUs may take appropriate decision for the SOAS for students admitted in AYS 2018-2019, 2019-2020, and 2020-2021.

Graduate seminar course The students may be allowed to take two such courses in the entire Ph.D. program.

Note: All other rules and regulations described in the manual shall be applicable to all Ph.D. students of IIT Goa.

Academic performance index

The academic performance of a student in a semester is measured by Semester Performance Index (**SPI**). SPI is the weighted average of the final grade points obtained in all the courses taken by the student during the semester. SPI is calculated to two decimal places.

An example SPI calculation is as follows. Suppose in a given semester; a student has taken five courses having credits C_1, C_2, C_3, C_4, C_5 and the student's final grade points in those courses are G_1, G_2, G_3, G_4, G_5 respectively. Then, the student's SPI is

$$\text{SPI} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4G_4 + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5} \quad (\text{II.1})$$

Cumulative Performance Index (CPI) CPI denotes the up-to-date academic performance of a student from the time the student enrolled in the Institute. CPI is the weighted average of the final grade points obtained in all the courses taken by the student since the student entered the Institute. The CPI calculation is the same as the SPI calculation.

Course credit calculation, grading, and types

III.1 Credit calculation from contact hours

Courses are classified mainly into theory, laboratory, self-learning, seminar, or research courses. Each course is associated with a fixed number of credits commensurate with the quantum of work associated with that course. For example, theory courses consist of lecture (L) hours and tutorial (T) hours, and may have practical (P) hours in special cases. Laboratory courses consist of practical (P) hours, and attached tutorial (T) hours in special cases. Credit (C) hours for a course is computed as follows¹

- For a full semester Lab/Practical only course, i.e., one with zero lecture hours but possibly with tutorials, the credit is

$$T + \left\lceil \frac{P}{2} \right\rceil$$

- Otherwise, i.e., when the course involves lectures, the credit is

$$L + T + \left\lceil \frac{P}{2} \right\rceil$$

- Credit hours of a half-semester course is half of that of a full semester course with similar L - T - P parameters.

Examples (also, see Table III.1 and Table III.2).

- A 3-0-0 full semester course with 3 lecture hours per week and no practicals or tutorials constitutes 3 credits. A half-semester course with similar parameters carries 1.5 credits.
- A standard 3-0-3 full semester course with 3 lecture hours per week and 3 lab hours per week carries 4 credits. So does a standard 3-1-0 course with 3 lecture hours per week and 1 tutorial hour per week.

¹Adapted from U.G. Curricular Structure 2019, IIT Goa

- A practical course with parameters 0-0-3, i.e., 3 hours of practical hours per week, carries 2 credits. Similarly a 0-1-2 course with 1 tutorial hour and 2 lab hours per week carries 2 credits.

Course	Lecture (L)	Tutorial (T)	Practical (P)	Credits	Remarks
XX801	4	0	0	4	
XX856	4	0	2	5	
XX541	2	1	0	3	
XX542	0	0	4	2	
XX543	0	1	2	2	
XX545	3	0	3	4	Floor
XX611	0	0	3	2	Ceiling

Table III.1: Hours per week for 12-14 week course

Course	Lecture (L)	Tutorial (T)	Practical (P)	Credits	Remarks
XX801	4	0	0	2	
XX856	4	0	2	3	Floor
XX541	2	1	0	2	Ceiling
XX542	0	0	4	1	
XX543	0	1	2	2	Ceiling
XX545	3	0	3	2	Floor
XX611	0	0	3	1	Floor

Table III.2: Hours per week for 6-8 week course

Old system Credit (C) hours for a course is computed based on the following formula²

$$C = 2(L + T) + P$$

Examples.

- A theory course with two lectures ($L = 2$), one tutorial ($T = 1$), two practical ($P = 2$) hours per week throughout the semester has a credit of $C = 8$.
- Similarly, a lab course with two tutorials ($T = 2$) and two laboratory ($P = 2$) hours per week throughout the semester carries a credit of $C = 6$.

²Adapted from IIT Bombay. This scheme is included for completeness.

III.2 Grading system

For some courses (typically core courses and electives) the passing grades that can be assigned to students have an associated grade point. A grade point is an integer number from 0 to 10 reflecting the level of performance of the student in the course. Letter grades associated with a grade point and their descriptions are listed in Table III.3. See Table III.4 for grades that are associated with no grade points.

Letter Grade	Grade Point	Remarks	Description
A*	10	Exceptional	Exceptional performance and mastery of the subject. The A* grade can only be given for core courses. This grade indicates an exceptional mastery over the subject when compared with students across multiple batches.
A+	10	Outstanding	Outstanding mastery of the subject and applications.
A	9	Excellent	Excellent mastery of the subject and applications.
B+	8	Very good	Very good mastery and scholarship in the subject.
B	7	Good	Good mastery and scholarship in the subject.
C+	6	Average	Acceptable understanding and mastery of the subject.
C	5	Below average	Below-average understanding and proficiency in the subject. Grade C is the minimum grade required for the evaluation of the final CPI of graduate students (masters and Ph.D.). If a graduate student secures a grade less than C, the student shall replace/repeat the course in the subsequent semester in accordance with other rules to be adhered to by the student.
D	4	Marginal	Border-line understanding of the subject and marginal performance.
E	2	Exposed	Grade E is a failing grade. Grade E is awarded for the students who attended the lectures and learned the subject to some extent but could not demonstrate marginal performance. Grade E is an acceptable prerequisite for registering in another course, however, students must re-register and pass.
F	0	Poor	The F grade indicates extremely poor and unsatisfactory performance in a course.

Table III.3: Letter grades with grade points

III.3 Graduate seminar

- Each graduate seminar consists of 2 credits.
- A student shall not take more than ONE graduate seminar course in the entire Ph.D. program.

III.4 Self-learning/reading courses

- Any course approved by the Senate as elective courses/ core courses which are being offered for graduate students may be offered as a self-learning course/ reading course and will be treated as per the course document.
- The courses meant to be offered as self-learning courses must be approved by the Senate.

Letter Grade	Remarks	Description
P	Pass	This grade is solely for Pass/Fail courses and represents satisfactory performance. No grade points allocated, but credits acquired.
F	Poor	The F grade indicates extremely poor and unsatisfactory performance in a Pass/Fail course.
S	Satisfactory	Progress satisfactorily in a dissertation, research, or project-oriented course. No grade points allocated.
U	Unsatisfactory	Progress unsatisfactorily in a dissertation, research, or project-oriented course. No grade points allocated.
I	Incomplete	Grade I is awarded in a lecture/lab course if a student has satisfactory performance, but has <ul style="list-style-type: none"> not appeared for the end-semester examination on medical grounds, or performed poorly/did not appear in the end-semester examination due to unavoidable circumstances. <p>The student has to appear in the end semester examination when the course is offered next or when the exam is offered next; otherwise, this grade will be converted to grade F. Grade I will then be converted into a performance grade depending on the overall performance in the course.</p>
W	Withdrawn	The course is withdrawn after the initial course adjustment period and before the course drop deadline specified in the academic calendar. This grade appears in a student's transcript.
L	Audit	Students registered for a course as audit shall be awarded grade L if they fulfill the requirement of duly satisfactory performance as prescribed by the Instructor. If a student does not qualify for the grade L, it will be assumed that the course has been dropped by that student and will not appear in the transcript.
FX	Failed due to low attendance	Grade FX in a course is awarded if a student does not maintain the attendance requirement in the lectures/tutorials. This grade may also be awarded to the students having bad or incomplete in-semester records on non-medical reasons. FX grade is typically declared in the first week of November for the Autumn semester courses and in the first week of April for Spring semester courses (The academic office decides otherwise). A student with FX grade in a given course is not permitted to take the end semester examination in that course. Such a student gets one more chance to register the same course to improve grades. Grade FX does not count in SPI / CPI calculations. However, it will be counted as a backlog. This is an internal grade and never shown in the transcripts.

Table III.4: Letter grades with no grade points

Credit calculation and grading for NPTEL/MOOC courses

We follow a uniform credit calculation and grade assignment for NPTEL/MOOC courses¹ (Table IV.1)

Contact hours per semester	Number of credits
40-44	3
28-32	2
12-16	1

Table IV.1: NPTEL/MOOC credit calculation

For every additional 8 hours per course above the higher limit in each row, 1 credit may be added. For example, see Table IV.2.

Actual work hours per semester as mentioned in the certificate/course brochure	Credits to be allotted
24 (16 + 8)	2
20 (16 + 4)	1

Table IV.2: NPTEL/MOOC credit calculation for additional hours

Note: No flooring or ceiling will be applied compared to regular courses offered by IIT Goa

Grade allotment to NPTEL/MOOC courses A student opting for NPTEL/ MOOC courses will have to secure a minimum of 65% for fulfilling credit requirements and grade allocation

The next higher grade may be allotted subject to the following conditions.

- The candidate may request for a written examination, which may be conducted by the AU. Such requests should be recommended by the AU to the Dean (Academic Programs) for consideration.

¹This follows the new credit system, which can be easily extended based on Annexure III

Score (%) as printed on grade card issued by respective authority	Grades
65-70	D (4)
70-75	C (5)
75-80	C+ (6)
80-85	B (7)
85-90	B+ (8)
90-95	A (9)
95-100	A+ (10)

Table IV.3: Grade allotment to NPTEL/MOOC courses

- The examination will be conducted by respective AU on recommendation from SPGC
- The absolute score in the exam should be atleast the score obtained by the student in the exam conducted by NPTEL/MOOC etc.
- The highest grade that can be obtained will be one higher than the grade obtained by the candidate as calculated from NPTEL/MOOC exam (see, e.g., Table IV.4).

Score obtained in NPTEL/MOOC	Grade allotted	Score obtained in the exam conducted	New grade to be allotted
64%	F	NA	NA
73%	C	73%	C+
81%	B	99%	B+

Table IV.4: Improving allotted grade to NPTEL/MOOC courses

Glossary

- APS** Annual Progress Seminar. 8, 9, 29
- AU** The Academic Unit such as a program, a department, a school, or a center where the Ph.D. student is enrolled. 1, 3–5, 7, 10, 12, 16, 21, 28, 29, 36
- AY** Academic Year, e.g. AY 2020-2021. 7, 28
- CPI** Cumulative Performance Index. 6, 8, 12, 21, 22, 30
- CSIR** Council of Scientific and Industrial Research. 25
- DA** The doctoral advisor or supervisor of a student enrolled in a Ph.D. program. Doctoral Advisor and Supervisor are used interchangeably. 4–10, 17–19, 25, 28
- DC** The Doctoral Committee of a Ph.D. student. 1, 5, 8–10, 12, 16–20, 22, 23, 28
- FA** The Faculty Adviser of a student. 4–7, 22, 25
- IIT** Indian Institute of Technology. ii
- PPGC** The Program Postgraduate Committee. 10, 16–19, 23
- SOAS** State Of the Art Seminar. 12, 29
- SPGC** The Senate Postgraduate Committee. iii, iv, 1, 6–9, 16–24, 26, 37
- SPI** Semester Performance Index. 8, 30
- TA** Teaching Assistantship. 2, 23
- UGC** The University Grants Commission. 25