Applicable to the B.Tech., Dual Degree (B.Tech+M.Tech.), 2 year M.Sc.

students admitted from the Academic year 2007 - 2008

Updated: September, 2018

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PREFACE

The Indian Institute of Technology Bombay (IITB) is one of the Indian Institutes of Technology in the country, set up with the objective of making available facilities for higher education, research and training in various fields of Science and Technology. The Institute is now recognized as a leader in science and engineering education not only in India, but worldwide. It has established a firm foundation for education and research with a high-quality faculty base and having a vision to be the fountainhead of new ideas and innovations in technology and science. The mission of IIT Bombay is to create an ambiance in which new ideas, research and scholarship flourish and from which the leaders and innovators of tomorrow emerge.

IIT Bombay on an average annually admits around 900 candidates for the undergraduate programmes (B.Tech./Dual Degree and 4 year B.S.) through Joint Entrance Examination (JEE), 30 candidates for B.Des. Programme through Undergraduate Common Entrance Exam for Design (UCEED) around 300 candidates for 2year M.Sc., M.Sc. Ph.D. Dual Degree, M.Sc.+M.Tech. Dual Degree programmes, over 800 candidates for different postgraduate programmes and around 300 candidates for various Ph.D programmes. IIT Bombay follows a specialized credit-based semester system. There are two semesters in an academic year (Autumn: July- Nov; and Spring: January-April) during which all courses specified for various degree programmes are offered. There is one additional semester during summer, called the Summer Semester, for summer courses. The students are required to follow certain procedures and meet specified academic requirements each semester.

This booklet gives comprehensive information on the existing Rules and Regulations for B.Tech., Dual Degree and 4 year B.S. Programmes.

IIT Bombay gives freedom to its various Departments /Centers / IDPs to tailor their academic programmes as per their specific needs, within the frame work of the Rules and Regulations approved by the Senate from time to time. Keeping in view the ever growing challenges and new developments, IIT Bombay revised its Undergraduate Programme (w.e.f. the Academic year 2013). The revised programme, provides additional opportunities and flexibility for students to optimize their learning experience. This needs continuous and meticulous planning of the academic profile on the part of each student to fully utilize the opportunities. The students, and parents/ guardians, are therefore, advised in their own interest to get fully familiar with the Academic system of the Institute, since in many ways it is different from what they would have come across earlier. Student's attention is brought particularly to the assessment procedures and the specific rules governing the grading system, academic performance requirements, etc.

IIT Bombay is a student-oriented place and endeavor to ensure that our students are offered the best opportunities that are needed to create outstanding scientists and engineers.

Thank you for your interest in IIT Bombay. We wish all our students a very bright future and a successful career.

Dean of Academic Programmes

1   INTRODUCTION

B.Tech./ Dual Degree / 4 year B.S. / B.Des. programmes consist of courses in basic sciences, humanities and social sciences, engineering and technology and other related topics. The sequence of studies broadly consists of three phases.

The first phase is an intense study of sciences, mathematics and humanities for deeper understanding of concepts than what was done in school. This is common for all UG programmes.

The second phase is the study of engineering sciences and technical arts (*such as workshop, engineering graphics, etc.*). This study is a broad based knowledge in general engineering, and engineering methodologies, and enables the students to appreciate the links between science and engineering. This phase is also, by and large, common for all UG programmes, and overlaps with the first phase.

In the third phase, the students are exposed to subjects in their chosen areas of study, designed to train them in the methodologies of analysis of problems and synthesis of solutions. The courses cover the principles governing systems and processes, and develop the ability for physical and analytical modeling, design and development. They are also introduced to engineering practices through laboratory courses, projects, etc., and these may vary from discipline to discipline.

In parallel with the third phase, students can strive to broaden their perspectives through two open Institute electives where they can take courses drawn from across the Institute.

4 year B.S. programme students, in addition, work independently on a project, wherein they investigate natural and abstract problems and produce mathematical, computational and/or experimental results.

Dual Degree students do additional courses to get in-depth knowledge in their chosen disciplines, often with specializations. In addition, they work on a research and development project during their final year.

At various stages of the programme, students are initiated into research methodologies, library reference work, use of engineering and scientific equipments / 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, opportunities exists for supplementing the learning experience by crediting additional courses, in diverse areas. These additional credits, when they are in focused areas, can earn the students credentials like Minor/Honors.

The requirements for degree programmes run by the Institute are broadly classified as:

- **Institute Requirements** (further divided into Compulsory courses, Elective courses and other requirements).
- **Departmental Requirements** (further divided into Compulsory courses, Elective courses and other requirements).

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 academic matters of the Institute, and the rulings of Senate Chairman (Director of The Institute) are final in regard to all academic issues. A definite time schedule is set by the Senate for various academic activities, through an Academic Calendar issued at the beginning of each academic year. The Senate continuously assesses the academic programmes and makes appropriate revisions/modifications/improvements as and when required through two Institute level Senate sub-committees: The Undergraduate Programmes Committee (UGPC) for

undergraduate programmes and a Post Graduate Programmes Committee (PGPC) for postgraduate programmes. The Dean of Academic Programmes (Dean, AP) and The Associate Dean of Academic Programmes (Associate Dean, AP) are the Conveners & Co-conveners respectively of these committees. Similarly, performance of each student is monitored by the Senate through two Institute level committees: Undergraduate Academic Performance Evaluation Committee (UGAPEC) and Postgraduate Academic Performance Evaluation Committee (PGAPEC). Conveners for these committees are designated from among Senate members. These four committees make recommendations to the Senate, and, in turn seek/receive opinions/recommendations, when required, from the two Department level committees in each department, Department UnderGraduate Committee (DUGC) and Department Postgraduate Committee (DPGC). The DUGCs and DPGCs handle all academic matters, related to both academic programmes as well as performance of individual students. The Head of the Department is the convener for both these Departmental committees. The Senate as well as its subcommittees have student representatives. Administrative backup for all academic matters is provided by the Academic Office, with a Deputy Registrar (Academic) as in-charge.

On joining the Institute, a student or a group of students is/are assigned to a Faculty Adviser from his/her Department. Students are expected to consult the Faculty Adviser on any matter relating to their academic performance and the courses they may take in various semesters / summer terms. Faculty Adviser guides the students to complete their courses of study for the required degree in a smooth and satisfactory manner.

All academic issues connected with the B.Tech., Dual degree and 4 year B.S./B.Des. programmes are handled by DUGC, UGAPEC and UGPC. If on any academic matter a student would like to approach this administrative structure, it is always through the DUGC with advice and recommendations from her /his Faculty Adviser.

Organizational structure for academic matters
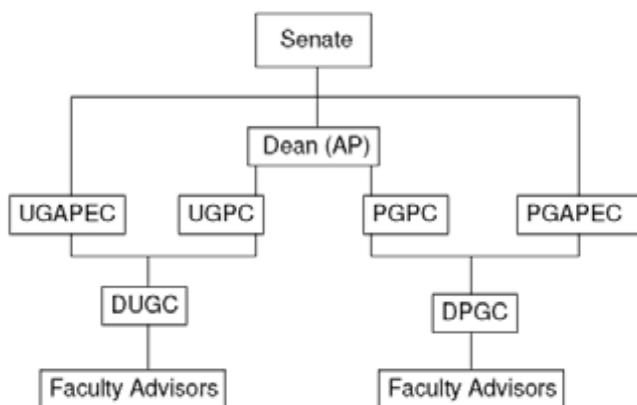
1.2   Academic Calendar
The academic activities of the Institute are regulated by the Academic Calendar approved by the Senate, and released at the beginning of each academic year. It is mandatory for students / faculty to strictly adhere to the academic calendar for completion of academic activities. Academic Calendar can be seen on the Academic Office homepage on the Institute website: http://www.iitb.ac.in/newacadhome/toacadcalender.jsp

2   CURRICULUM / PROGRAMME OF STUDY
2.1   Curriculum
Every Department has a prescribed course structure which, in general terms, is known as the Curriculum or the Courses of Study (COS). It prescribes all the courses/labs/other requirements for the degree and sets out the nominal sequence semester-wise. It also gives the syllabus and a list of text / reference books for each course. The Courses of Study details are updated every semester and are made available at http://asc.iitb.ac.in

2.2   Semester – Autumn, Spring, Summer
The Institute follows a specialized credit based semester system. There are two regular semesters in a year. The semester that begins in July (July to Nov.) is known as the Autumn Semester or Semester 1 and the semester that begins in January (Jan. to April) is known as the Spring Semester or Semester 2. During the summer vacation, i.e., (May-June), there is one additional semester for summer courses known as the Summer Semester. Only a few courses run in summer (Sec.3.8) and are utilized by students, when offered, to clear failed/dropped courses.

2.3   Course Credit Structure
In general, a certain quantum of academic work measured in terms of credits is laid down as the requirement for a particular degree. A student earns credits by satisfactorily clearing courses/other academic activities every semester. The credits associated with a course are 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.

2.3.1   Theory and Laboratory Courses:
Courses are broadly classified as *Theory Courses and Laboratory Courses*. Theory courses consist of lecture (**L**) and tutorial (**T**) hours, but may have attached practical (**P**) hours in special cases. Laboratory courses consist of practical hours, but may have attached tutorial hours in special cases. Credit (**C**) for a course is obtained by multiplying the number of hours of instruction per week in that course, by two (**2**) for lecture and tutorial hours, and by one (1) for laboratory hours. Thus, for example, a theory course having two lectures and one tutorial per week throughout the semester carries a credit of 6. Similarly, a laboratory course having one tutorial and three laboratory hours per week throughout semester carries a credit of 5. Thus,

Theory Courses				Laboratory Courses			
L	T	P	C	L	T	P	C
2	1	0	6	0	1	3	5

In the Courses of Study bulletin, if a theory course is shown as, say, **CE304 Soil Mechanics II : 2 1 0 6**, it indicates the following :

Theory Course	
Course details	**Indicates the following**
CE	Alphabetic code for Civil Engg. Department course
3	Year / Level code (This indicates that the course is offered in the Third year)
04	Serial Number and the Semester indicator (last digit indicates even or odd semester. Even=Spring Semester; Odd=Autumn Semester
Soil Mechanics II	Title of Course

If a laboratory course is shown as, say **CE 218 Hydraulic Design Lab : 0135**, it indicates the following:

Laboratory Course	
0 1 3 5 L T P C (credit structure)	
Laboratory Course	**(CE 218 : Hydraulic Design Lab : 0 1 3 5)**
CE	Alphabetic code for Civil Engg. Department course
2	Year / Level code (This indicates that the course is offered in the Second year)
18	Serial Number and the Semester indicator (last digit indicates even or odd semester. Even=Spring Semester; Odd=Autumn Semester
Hydraulic Design Lab	Title of Course

Other academic activities consist of Seminar and Projects and NSO/NSS/NCC. These are credit as well as noncredit requirements. Seminars, Projects are credit requirements, whereas NSO/NSS / NCC is a noncredit requirement.

2.3.2 Seminars
Some departments may prescribe Seminar as a requirement for the B.Tech./ 4 year B.S./ B.Des. or the Dual Degree. Seminar is a course wherein under the guidance of a faculty member a student is expected to do an in-depth study in a specialized area by doing a survey of published technical literature, understanding different aspects of the problem and arriving at a status report. While doing a seminar, the student is expected to critically analyze works of various authors/researchers, learn the investigation methodologies, study concepts, techniques and the results presented in these papers, and present a seminar report. It is mandatory to give a seminar presentation before a panel constituted for the purpose. Seminars typically carry 3 credits.

2.3.3 Projects
2.3.3.1 B.Tech. Projects (BTP - I and BTP - II):
Some departments may prescribe a Project as a requirement for the B.Tech. degree, or as a requirement for Honors (see Sec.2.5.2), wherein under the guidance of a faculty member a student in the sixth semester, or later, 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. These projects (BTPs) may be offered as a single unit of 12 credits (BTP) or two modules of 6 credits each (BTP-**I** and BTP-**II**). Departments may also prescribe a minimum performance in BTP-**I** for being eligible for BTP-**II** (See Sec.5.5.1).

Even when it is not prescribed as a minimum requirement for the degree or when not being interested in Honours, a student can opt to do a BTP as additional learning, if s/he so desires and can find suitable supervisor (s) to guide her/him.

2.3.3.2 4 year B.S. Project
Project is mandatory for 4 year B.S. The project is normally done during both the semesters of the final year, wherein the students work independently and investigate natural and abstract problems and produce mathematical, computational and/or experimental results. 4 year B.S. Project carries a total of 30 credits.

2.3.3.3 Dual Degree Project (DDP):
Dual Degree Project is a mandatory requirement in the Dual Degree Programmes. The project consists of two stages, spread over a fourteen month duration, normally starting from the summer after the eighth semester and ending with the summer after the tenth semester. These are essentially research and

development projects, where a student trains him/herself, under the guidance of supervisor/ s, in in-depth analysis of an engineering problem and attempts synthesis of a solution. Literature survey, problem analysis and problem definition, extensive experimental/modeling work, and analysis of results typically form various components of the project work. DDP carries a total of 72 credits.

2.3.4   Non-Credit Requirements:
2.3.4.1 NCC / NSO / NSS
One of the three activities, National Cadet Corps (NCC) or National Sports Organization (NSO) or National Social Service (NSS) is a mandatory requirement for all students for the award of degree. These are normally conducted during evenings of week days and are designed to build character and to sensitize the students to social / national issues. These activities carry no credits and are evaluated as Pass(PP) / Not Pass (NP).

2.4   Minimum Credit Requirements and Planning of Individual Academic Programme (233rd meeting of the Senate)

Depending on the discipline, the minimum credit required for award of a B.Tech. / B.S. / B.Des. degree is between 266 and 282 (though the department component can be differently designed by the departments).

This is nominally divided into Basic Sciences (60 to 62), Engineering Sciences & skills (30), HSS Electives (12), Institute Electives (12), Departmental courses (152 to 168).

The "BTech+MTech Dual Degree programme" should have all of the following components over and above the corresponding basic Btech curriculum:

[a] BTech honors credit [a minimum of 24 credit that can comprise of courses or (courses + a BTech Project). The BTech Project duration can be of two semesters with maximum of 18 credits [e.g. 6 (Stage-I) + 6/12 (stage-II)].

[b] 24 credits consisting of four masters level courses,

[c] 72 credits of masters' thesis spread over 14 months [e.g. summer between eighth and ninth semester, plus ninth and tenth semesters].

The credits are distributed semester-wise as shown in the Courses of Study bulletin for each department. Courses generally progress in sequences, building competencies and their positioning indicates certain academic maturity on the part of the students. Some courses do, in addition, specify passing in courses offered earlier in the programmes as pre-requisites. Students are expected to follow the semester-wise schedule of courses given in the Courses of Study bulletin; they do, however, have freedom to follow alternative schedules to optimize their academic profile with additional courses, keeping the requirements for each course in mind. For students with backlog courses, such rescheduling may even become necessary. Such departures from suggested schedules need to be done very carefully, and always with advice from the Faculty Adviser.

2.5 Opportunities for Additional Learning: MINOR, HONOURS, ETC. :
The B.Tech./Dual Degree/4 year B.S. programmes recognize the fact that students' aspirations, on one hand, and the demands of the work place, on the other, have become highly diverse. Every student has specific abilities, interests and career goals. Employers too look for people with different combinations of competencies and flavours.

Each programme prescribes minimum credits and courses that qualify a candidate for the award of the Degree in a particular discipline. The total credits for the B.Tech. Programme, for example, varies between 268-278 depending on the discipline, as mentioned earlier. This approximately converts itself into about four theory courses and one or two laboratory courses or other activities like seminar, project, etc., every

semester. Every student in that discipline undergoes this programme. This minimum content may not have much flexibility.

The Dual Degree programme will have an additional master's level component of 96 credits which includes 24 credits of post graduate level courses and a Master's thesis. The programme also prescribes a mandatory honours component of 24 credits. This approximately converts itself into about five theory courses and one or two laboratory courses or other activities like seminar, projects etc., every semester.

Normal load during a semester permits B.Tech., 4 Year B.Sc. and B.Des. students, who are not identified as academically weak (see Sec. 5.1-5.2), to optionally take an additional course (about 6 credits). [This surplus quality time (equivalent to a total of about 36 credits, about six credits every semester after the first year) available beyond the minimum programme permits a student to tailor her/his curriculum vitae to satisfy her/his widely varying interests /abilities/aspirations and to suit multifarious competencies that the employers desire].

It is expected that all students with reasonably good academic standing, utilize this surplus time for enhancing their academic learning experience, though the initiative is left entirely to them. They can use it to credit an assortment of courses/projects anywhere in the Institute, (subject to requirements of each of these courses being met), to gain a wide exposure. These additional academic accomplishments will find a separate mention in the transcript (Sec.5.10.4). They can also credit focused activities which can qualify as a minor/honours (details below). They may alternatively devote part or all of the additional time for extra-curricular activities (including social work) if they so desire, and gain hands-on administrative/ managerial/ aesthetic skills or sensitivity towards social issues.

Since seats available in such additional courses are often limited and the competition severe, students aspiring to do these additional courses have to maintain high academic standing to register in these courses. Sustained hard work and diligence throughout the duration of the programme is necessary to maintain the academic standing and gain entry to courses of one's choice. This additional time will be used by students with backlogs (failed or dropped courses) to clear them with proper classroom learning. They may not be able to take the courses towards additional accomplishments mentioned above, if any of her/his backlog courses is running in a particular semester, or s/he does not have adequate academic standing (see Sec.5.1-5.4).

2.5.1 Minor

Minor is an additional credential a student may earn if s/he does 30 credits worth of additional learning in a discipline other than her/his major discipline of B.Tech. degree. All academic units in the Institute will offer minors in their disciplines, and will prescribe the set of courses and/or other activities like projects necessary for earning a minor in that discipline.

A student **pre-register** for a minor which is finally allotted on the basis of highest CPI. S/he accumulates credits by registering for the required courses, and if the requirements for a particular minor are met within the prescribed minimum time limit for the course, the minor will be awarded. This will be mentioned in the Degree Certificate as "Bachelor of Technology in xxx with Minor in yyy." The fact will also be reflected in the transcript, along with the list of courses taken.

Since the number of seats available for each of the courses is often limited, one has to compete for a place in every course. Maintaining a high academic standing therefore is essential for completing all the requirements for a minor as mentioned earlier. Even if one specified course cannot be earned during the course of the programme, that minor will not be awarded. The individual course credits earned, however, will be reflected in the transcript.

For the award of the minor, all requirements towards the basic degree and the minor have to be completed within the stipulated period of the programme one is registered for.

Minor option is not available to Dual Degree students unless they have an excellent academic standing (Category I, Sec.5.1-5.2)

The Senate in its 224 th meeting held on 10 th February, 2016, **approved** the proposal of **allowing Dual Degree students to undertake minor courses in the 5 th Year on the basis of the following terms and conditions.**

The **Students with CPI > 8 (Category 1 Students)** be allowed to take up an additional course and overload themselves upto 48 credits in their fifth year. These students may be allowed to tag the additional course as a minor course in their fifth year, so as to complete requirements to get a Minor Degree.

2.5.2   Honours

Honours is an additional credential a student may earn if s/he opts for the extra 24 credits needed for this in **her/his own discipline**. The concerned department specifies the credit requirements for earning the Honours. Honours is not indicative of class.

At the time of registration, a student register for Honours. S/he accumulates credits by registering for the required courses. On successful accumulation of credits at the end of the programme, this will be mentioned in the Degree Certificate as "Bachelor of Technology in xxx, with Honours." The fact will also be reflected in the transcript, along with the list of courses taken.

For the award of the honours to B.Tech. students, all requirements towards the basic degree and the honours have to be completed within the stipulated period of the programme one is registered for.

Dual degrees of B.Tech and M.Tech intrinsically demand a deeper expertise in the major discipline of the student, and therefore Dual Degree students are required to complete the requirements for Honours, as prescribed by the department. The requirements for Honours for a Dual Degree student may be different from those prescribed for a BTech student. This requirement is over and above the basic requirements for the dual degrees as prescribed by each department. The total credit requirement is therefore 268-278 (B.Tech.) + 24 (Honours) + 96 (M.Tech.).

2.5.3   Two Minors etc. for Students with Excellent Academic Standing

Students with excellent standing (Category I, CPI 8.0, no backlogs, See. Sec.5.1) can opt for earning an additional minor (i.e., an Honours and a minor, OR if time table permits, two minors), by overloading themselves (See Sec.5.2). Students should however take care to see that they are not overstretching themselves by opting for such overloads over extended periods.

Students with an excellent academic standing (Category I,CPI> 8.0, no backlogs, see Sec.5.1) who are permitted to overload themselves, may be able to earn a minor apart from the mandatory Honours. Rules for overloading apply (Sec.5.4).

3   REGISTRATION

IIT Bombay follows a specialized credit based semester system, therefore registration at the beginning of each semester on the prescribed dates announced in the Academic Calendar, is mandatory for every student till s/he completes her/his programme. If a student does not register in a particular semester without prior permission of the UGAPEC, her/his studentship is liable to be cancelled. Students are not permitted to re-register for course/(s), which they have already passed. Without registration, any academic activity (course / seminar / project etc.) undergone by a student will not be counted towards the requirements of her/his degree.

3.1   Semester-wise registration

On joining the Inst itute, each student is assigned to a Faculty Adviser or an Advisory group (Sec.3.9). The student can register for courses s/he intends to take during a given semester or summer term on the basis of the programme for each discipline as given in the Courses of Study bulletin and as per the advice given by

his/her Faculty Adviser. The Faculty Adviser is expected to discuss with the student his/her academic performance during the previous semester and then decide the number and nature of the courses for which s/he can register during the semester within the framework of the guidelines as approved by the Senate. The Faculty Adviser may advise the student to drop one or more courses/activities based on his/her academic performance (Sec. 4.1-4.4). In fact the Faculty Adviser may even advise a reduced load programme over several semesters for students with poor performance at the end of the first semester/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. In all circumstances, registration must be completed on or before the prescribed last date for registration. Students having outstanding dues to the Institute or a hostel shall not be permitted to register.

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 Adviser, who finally approves the registration. Unless this procedure is completed, registration will be considered invalid. All students without backlogs / less than 5 backlogs will do online registration.

3.2.2   Manual Registration
Students having 5 or more backlog course /(s) are required to do manual registration by filling up the Course Registration Form (CRF) which will be made available to them by the Academic Office, through their Faculty Adviser The student should duly complete the CRF, stating the courses and project / seminar etc. that s/ he proposes to complete during that semester as per the prescribed curriculum, in consultation with the Faculty Adviser, get it approved by him/her and then submit the same to the Academic Office within the stipulated date for registration.

3.2.3   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.

3.2.4   Registration for the first two semesters
In each of the first two semesters, courses common to all branches are generally offered. A student is normally required to register for all the courses listed in the curriculum for these two semesters. Students, who are identified as academically weak at the end of first semester, may be prescribed a reduced load. Such students are required to do manual registration only.

3.2.5   Registration for third and subsequent semesters
From third semester onwards, registration is dependent on the academic standing of the student (Sec.4.1). A student with an academic standing of Category I, II or III registers for the academic load specified for that semester by the Department. In addition s/he may add one more course (6/8 credits) towards additional learning or to clear backlog courses, without this being considered an overload (Sec.4.5).

Students with poor academic standing (Category IV or V) are advised not to attempt full load. Faculty Advisers after careful scrutiny will advise reduced loads depending on previous performance. Every student however is required to register for a minimum of 18 credits in any semester, (Sec.4.3)

3. 3   Registration for Non-credit courses (NCC/ NSO / NSS)
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. One of NCC, NSO or NSS, is a mandatory requirement. Students are expected to complete these requirements during the first year (first two semesters). Formal registration for any one of these activities must be done along with other courses, at the beginning in the first two

semesters. The choice of the activity will be done on the basis of the aptitude of the student for any one of these activities and will be decided by a committee constituted for the purpose. Once registered for one of these activities, no change will be permitted at a later stage.

A student will be awarded PP (Pass) grade for any one of these activities s/he is registered for, in that semester, provided the minimum requirement is met during that semester together with attendance criteria. Not satisfying these requirements will result in a fail grade NP (Not Pass), and the student has to re-register for the activity in the next semester. This requirement must be completed before the end of the second year. In case valid reasons exist, a student may be given special permission for completion of this requirement beyond second year. The grades are sent to the academic office before the commencement of the semester-end examination.

In addition to the above mandatory requirements, the students are permitted to take NSS/NSO/NCC in subsequent years too, if they have special interest. This will be mentioned in the transcript (Sec.5.10.4)

3.4   Registration for Projects
3. 4.1   Registration for B.Tech. Projects (BTPs)
Registration for B.Tech. Projects (BTPs) as specified in the curriculum, is similar to that for any other course. The details of allotment of topics, faculty supervisors etc., is specified by the concerned Department before the commencement of the semester.

3.4.2   Registration for Dual Degree Projects (DDPs)
i. Each Dual Degree student registering in the summer after the eighth semester shall be given a topic for the project work by the end of the eighth semester. Similarly for those registering in spring, the topic will be given by the end of the preceding autumn semester.

ii. The total duration for the DDP is fourteen months. DDP consists of two stages. Registration for Stage I (30-36 credits) is normally at the beginning of 8th semester and for stage II (36-42credits) after succeeding of Stage I. The duration of Stage I include both the summer and the succeeding autumn semester, and that for Stage II includes the spring and the succeeding summer semester. In case of deferment due to backlogs etc., the registration for the two stages will be in the beginning of the spring and autumn semesters. The durations are correspondingly spring and summer, and autumn and till the end of February of the succeeding spring semester, respectively. Special cases if any will be taken up on a case-to-case basis by the UGAPEC, upon the recommendation of the DUGC.

Project Stage	Registration	Submission/Presentation/Assessment to be completed during the following period	Submission of Grades to the Academic Office on or before
I Stage	Registration for I stage will be done in January(8th Semester)	1st September to 31st October (9th Semester)	5th November of the same year (9th Semester)
II (Final) Stage	Registration for II stage will be carried out along with the grade report for the I stage evaluation	30th April to 30th June (Just after 10th Semester)	5th July of the same year (Just after 10th Semester)

iii. Each Dual Degree student should have a member of the faculty as a supervisor. In addition, Co-supervisor/(s) from the same Department/ other Department / IDP Group/Centre / School may be co-opted by the supervisor with the approval of the DUGC. If the supervisor is not from the same department as the student, a co-supervisor from the Department is necessary.

iv. Whenever a supervisor leaves the Institute permanently / temporarily, the DUGC shall make

alternative arrangements for guidance during the supervisor's absence.

Requirements for the DDP and the evaluation procedures are given in Sec.5.5.2

3.4.3   Registration for 4 year B.S. Project
The 4 year B.S. programme project consists of two stages. Registration for Stage I (12 credits) is done in the 9 th semester (Autumn) and Stage II (18) credits is done in the 10 th semester (Spring). The duration of the project is spread over a semester. In case of deferment due to backlogs etc., the registration can be done in the succeeding semesters on recommendation of the DUGC and approval of the Dean of Academic Programmes. The topics for the project work will normally be assigned towards the end of the pre final year by the Project Coordinator of the Department and the work is done during both the semesters of the final year. Students are assigned project work as per the schedule mentioned in the Academic Calendar after its approval by their respective Faculty Adviser/ DUGC. 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 academic calendar) to the Co-coordinator and present it to a Panel of Examiners. Registration for second stage is subject to satisfactory completion of the first stage.

3.5   Course Adjustment/Dropping of courses
1. The Academic Calendar sets a date, normally two weeks after the commencement of the semester, for Course Adjustment. On or before this date, a student is permitted to make adjustments in her/his academic load by addition or deletion of one or more courses, projects etc., provided the total credits do not exceed the overload rule (Sec.4.5) or fall below 18 credits, by such adjustments. Course adjustment has to be done in consultation with the Faculty Adviser When the need for course adjustment through addition, substitution or dropping of course/s arises, the student without any backlog should do online course adjustment and students with backlog course/s should do it manually by filling a Course Adjustment Form (CAF). CAF has to be signed by both the student and the Faculty Adviser and submitted to the Academic Office.

2. If in the second or any of the subsequent semesters, a student finds her/his academic load too heavy, s/he may drop one or two courses out of the registered ones on advice from the Faculty Adviser, provided the minimum credit requirements (*18 credits*) is fulfilled. The last date for such drops is typically 10 days after the end of the mid-semester examination, and is set in the Academic Calendar. It is expected that the results of the mid-semester examination will be known within seven days of the end of the examination.
3. Course/s dropped by a student may be taken during a subsequent semester or during the summer term (*if offered*).

3.6   Dropping of a Semester
1. A student may opt/be advised to drop an entire semester, with prior approval of DUGC/UGAPEC due to the following reasons:
i. During a registered semester, if a student finds that s/he is unable to cope up with the studies and/or does not have sufficient exposure to most of the courses registered in that semester due to severe health problem or some other valid reasons beyond her/his control, s/he can opt to drop the entire semester, on advice from the Faculty Adviser and with permission from the DUGC/UGAPEC (Sec.3.5).
ii. A student may seek a semester drop, due to severe personal health problem, unavoidable family commitments or other valid reasons beyond her/his control, on advice from the Faculty Adviser and with permission from the DUGC/UGAPEC, prior to the commencement of the semester itself.

2. In all cases of severe health problems, medical certificate issued by IIT Hospital is essential. If however, the medical certificate is issued by other hospitals/private practitioners, the certificates should be duly authenticated by the CMO, IIT Hospital. In all other cases, requests for dropping the semester should be accompanied by supporting documents as required.
3. A student will be not permitted to drop a semester after the award of DX /II grade/(s) and / or

semester end examination.

4. Such breaks from studies is normally not permitted for a continuous period in excess of one year.
5. Not registering for any semester before the last date for registration without prior approval of the UGAPEC will result in the UGAPEC recommending termination of the studentship (See Sec.7.3).
6. Hostel accommodation and other institutional facilities will not be extended in any semester for which the student has not registered.

3.7   Registration for Additional Courses: (Minor, Honors, etc.)

As mentioned in Sec. 2.5, opportunities are provided for students to enhance their learning experience through earning additional credits. Extra credits earned in specified focused areas can also lead to earning an Honors (in ones own discipline) or a Minor (in other disciplines).

Starting from the third semester, students who are not academically weak (see Sec.5.1, 5.2) are permitted to take one course equivalent every semester in addition to the prescribed courses for their degree, as mentioned earlier, subject to availability of seats in the course. A student has to preregister for the Minor course s/ he intends to take towards the end of the previous semester and seats will be allotted based on the academic performance of the student towards the basic requirement of his/ her degree.

One should note that there is no specific registration for Honours Courses. One accumulates the required credits during the course of the programme, and the additional credential is awarded if the criteria set for them are met when the student graduates.

In any semester, a student cannot register for only those courses which form part of her/his additional learning component. There should at least be one course component that is specified as the minimum requirement of the degree. Moreover, a student cannot overstay in the programme once the minimum requirements prescribed for the degree are completed.

3.8   Summer course registration

Students can register for courses during summer (See Sec.5.8) up to a maximum 18 credits or three courses depending on their academic standing, on payment of registration fee at prescribed rates. A course will run during summer provided a faculty member is available for running the course and a minimum of 5 students are registered for the course. The Summer Semester typically runs for 8 weeks, during May-July. The total number of contact hours for the courses remains the same as that during the regular semesters, and therefore the courses run at accelerated pace. The evaluation and grading patterns also remain the same as during the regular semesters.

3.9   Role of the Faculty Adviser

On joining the Institute, a student or a group of students is/are assigned to a Faculty Adviser The students are expected to consult the Faculty Adviser on any matter relating to their academic performance and the courses they may take in various semesters. The Faculty Adviser guides to the students to complete their courses of study for the required degree in a smooth and satisfactory manner. For effective utilization of the opportunities for additional academic accomplishments, planning of the individual's academic journey needs careful consideration, and constant consultation with the Faculty Advisers is imperative. Thus, the role of the Faculty Adviser is of immense importance. **The Faculty Adviser is the person whom the parents/ guardians should contact for performance related issues of their ward.**

The role of the Faculty Adviser is outlined below:

1. Guide the students about the rules and regulations governing the courses of study for a particular degree.
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 Adviser has to discuss with the student his/her academic performance during the previous semester and then decide the number and nature of the courses for which s/he can register during the semester as per

the curriculum.

3. Approve the registration of the students. Student without any backlog will do online registration. Faculty Adviser has to approve the same. For this purpose s/he has been provided online interface. Students having backlog courses (5 or more courses) has to register manually. Course Registration Form (CRF) of such students is provided to the Faculty Adviser through the Departmental office. The FA has to approve the CRF by signing on it, before the prescribed last date.

4. Advice 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 Adviser may even advise a reduced load programme for a poorly performing student. This reduced load programme may spread over several semesters subject to minimum load for the semester and completion of the degree programme with in the prescribed maximum period. Such reduced load programme is to be prepared by the Faculty Adviser in consultation with the Student; her/his parent and recommend the same through the DUGC to the UGAPEC for consideration and approval 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. Advice students for Course Adjustment / Dropping of courses during the Semester within the stipulated time frame given in the Academic calendar.

8. Advice students seeking semester drop either during the ongoing semester or before the commencement of the semester. FA has to ensure strict compliance of rules and regulations laid down for this purpose. Recommend the cases to the appropriate authorities for consideration.

9. Make revised plan of study for weak/bright students based on their semester-wise performance.

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

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

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

13. Inform students that any academic activity (course / Lab./ seminar / project / non credit requirement etc) undergone without proper registration will not be counted towards the requirements of his/her degree.

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

15. Keep the students updated about the *Academic Administration of the Institute.*

4   SPECIAL FEATURES IN REGISTRATION

The curriculum has special features that a student must be aware of while registering for courses. These include institute core courses, department core and elective courses, non departmental courses, minor and honours options. 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   Academic Standing

Depending on the overall academic performance of a student till date, especially in the two preceding regular semesters (Autumn and Spring) registered, academic standing of the student is decided. **The performance in courses registered in addition to the prescribed minimum requirement for the degree is not taken into consideration while determining the academic standing.** (Here, failed courses refer to courses in which a FR grade has been awarded. A NP (not passed) grade is not counted towards failed courses in the context of determining the academic standing).

Categorization of the academic standing of a student is as follows :

Category I : Excellent Standing : A student who has no backlog courses (failed courses which have not been cleared subsequently or dropped courses), and has a CPI equal to or greater than 8.0, subject to having cleared the total number of credits prescribed upto that semester in his/her discipline.

Category II : Satisfactory Standing : A student who has registered for at least 18 credits in each of the two

preceding regular registered semesters and not failed in any course in these two semesters.

Category III : A student who has not failed in more than one course in the two preceding regular registered semesters, subject to having earned at least 18 credits in each of the semesters.

Category IV : A student who has failed in more than one course in the two preceding regular registered semesters, but has earned at least 18 credits in each of the semesters.

Category V : A student who has not earned at least 18 credits in either one of the previous two regular registered semesters.

Only students of standing of Category I, II or III are permitted to register for normal load described below (Sec.4.2). Category IV and Category V students should register for lower credits as described in Sec.4.3.

4.2   Normal load

The total requirement of credits for the B. Tech. is between 252 and 264, depending on the discipline. The average prescribed credits per semester is therefore around 33 credits. Similar semester credits are prescribed for 5 Year Integrated M.Sc. and 4 year B.S. students too.

In the first semester of the first year, the normal semester load is 33 or 34 credits depending upon whether a student has registered for ME 119 (5 credits) or ME 113 (4 credits). Every student registers for all the prescribed courses.

In the second semester of the first year, a student of Category III, and category IV (if not recommended for termination, see Sec.7.3) as a special case, will be permitted to take one backlog course in addition to the prescribed minimum, with the specific recommendation of the Faculty Adviser No student will be allowed to take courses from later years in this semester. Category V students will register for reduced load as advised by the Faculty Adviser (See Sec. 4.3)

In subsequent semesters, every student must register for a minimum of 18 credits each semester. In case a student with backlogs has completed most of the minimum credit requirements, she/he may register for the remaining courses which are available in that semester, which may be less than 18 credits.

In these semesters, normal load for a **B.Tech. or 5 Year Integrated M.Sc., 4 Year B.S.** student is defined as the prescribed load for the minimum requirement of the degree for that semester **and credits for an additional course (6-8 credits), subject to**

* total credit not exceeding 48 credits (50 credits in case the additional course is of 8 credits) and

* the number of theory courses not exceeding 6.

For example, the prescribed credits in semester 3 for a particular discipline may be 33. The normal load for that discipline in the semester is 39-41. This load is calculated by adding the prescribed credits and credits for an additional course (6 or 8 credits). The normal loads for other semesters are to be computed along similar lines. **Students with academic standing of Category I, II or III are permitted to take normal load.**

Those with excellent academic standing (Category I) can, in addition, overload themselves to the extent of one theory course equivalent (6 or 8 credits). That is, they can register for two courses in addition to the prescribed load, subject to

* total credit not exceeding 48 credits (50 credits in case the additional course is of 8 credits), and

* the number of theory courses not exceeding 6.

Students belonging to excellent (Category I) and satisfactory academic standing (Category II) therefore can reasonably aspire to utilize the additional learning opportunities to the fullest extent.

Category III students should use the additional course permitted to clear the backlog courses if available in the semester. If backlog courses are not available, they can also use the opportunity for additional learning in that semester.

Students belonging to Category IV and V can only register for reduced loads as described in Sec. 4.3 below.

A summary of normal load for **B.Tech. and 5 Year Integrated M.Sc and 4 Year B.S. students** in different semesters is given below. The symbol Xj denotes the credits prescribed for the semester j, $3<=j<=10$ in her/his branch; and C is the maximum credits assigned to any course.

Permissible academic loads for B.Tech./5 Year Integrated M.Sc, 4 Year B.S. Students of various academic standing

Semester	1	2	3 to 10
Reduced load (Category V, Sec5.3)	33 or 34	33 or 34, less one theory course	X_j less one theory course
Prescribed Credits (For Category I,II,III,IV)	33 or 34	33 or 34	X_j
Normal load (For Category I,II,III,IV)	33 or 34	33 or 34 **41 or 42 Only for Cat. III and IV for clearing backlog**	$X_j + C$ (Subject to : see text)
Overload (Category I only) (Sec. 4.4)	33 or 34	33 or 34	$X_j + 2C$

Dual Degree students are typically prescribed an additional theory course every semester towards the mandatory honours and dual degree requirements. Therefore the normal load for these students will be the prescribed load itself. Category II and III students from the dual degree cannot therefore register for courses towards additional learning.

However, from the 5th semester onwards Dual Degree students belonging to Category II and III and a CPI >6.5 may be allowed to take one additional course in a semester, only for the purpose of clearing backlog courses. This is done in consultation with the faculty adviser and prior approval of the UGAPEC.

Students belonging to Category IV and V can only register for reduced loads as described in Sec.5.3 below.

Category I students can take one course extra as an over load towards additional learning (Sec.5.5).

A summary of normal load for **Dual Degree** students in different semesters is given below. The symbol Y denotes the credits prescribed for the semester j, $3 <= j < = 10$ in her/his branch; and C are the maximum credits assigned to any course.

Permissible academic loads for Dual Degree Students of various academic standing

Semester	1	2	3 to 10

Reduced load (Category V, Sec5.3)	33 or 34	33 or 34, one theory course	Y_j less two theory less courses
Prescribed Credits (For Category I,II,III,IV)	33 or 34	33 or 34	Y_j less one theory course
Normal load (For Category I,II,III,IV)	33 or 34	33 or 34 **41 or 42 Only for Cat. III and IV for clearing backlog**	Y_j (Category II and III permitted to register for 1 backlog course)
Overload (Category I only) (Sec. 4.4)	33 or 34	33 or 34	$Y_j + C$

4.3   Reduced Load for Category IV and Category V students

B.Tech. and 4 Year B.S. students belonging to category IV can only register for a total of credits equivalent to the prescribed credits for that semester in her/his discipline (X_j in the table above). (This normally would mean four theory courses and one or two labs. etc.). They cannot register for the additional 6-8 credits permitted for students with Category I, II and III standing.

Students belonging to category V status can only register for those many credits which are at least one theory course equivalent less than the credits prescribed for that semester in her/ his discipline, subject to a minimum of 18 credits. (This normally would mean three theory courses and one or two labs. etc.).

Dual degree students of Category IV and Category V are advised to register for one and two theory courses, respectively, less than their prescribed load, and as advised by the faculty adviser.

All students in Category V should submit a revised schedule along with the course registration form, in consultation with the Faculty Adviser, for the succeeding semesters stating how the backlog courses will be cleared.

Students have to register for the backlog courses before registering for other courses, if those courses are available in that semester. However, Faculty Adviser can recommend exceptions to avoid cascading effects due to prerequisites for other courses.

4.4   Overload

Student with Excellent Academic Standing (Category I) may be permitted to take one course per semester, in addition to the normal load, as overload, subject to a maximum of 6 theory courses. There shall be no relaxation of the CPI criterion for the additional overload. A change of status from Credit to Audit in respect of such courses may be allowed up to the mid-semester examination with the prior approval of the UGAPEC. Overloading of courses is subject to time-table constraints.

Since this overloading can lead to poorer overall performance in terms of SPI, CPI etc., this should be done after careful consideration and discussion with the Faculty Adviser.

4.5   Carrying backlogs forward

Attempts are made in the programme to give an early opportunity to register for the backlog course for students who fail a course in a given semester. This is provided in the new curriculum in two ways.

4.5.1   Offering of core courses in both semesters

The Institute core courses are expected to be offered in both the semesters, so that a student can register for a backlog course in the immediate next semester. For department level core courses, particularly those that

form prerequisites for courses which follow, the procedure of offering the course in both semesters, is to be adopted. This gives a student a second attempt to clear a backlog core course in the immediate succeeding semester.

4.5.2   Normal load accommodates credits for an additional course
As mentioned in Section 4.1, B.Tech./4 Year B.S./Dual Degree students with standing Category I, II or III can register for an additional course every semester as part of their normal load. Students of Category III therefore can clear backlog courses at the earliest opportunity, without dropping courses.

For department core courses that are not possible to be offered in both semesters, the Faculty Adviser may advise the students appropriately for dropping the backlog course in favor of some other course in order to avoid a cascading effect in subsequent semesters. The Faculty Advisers and DUGCs would exercise special care and assist the students in this regard.

4.6   Audit course
A student wanting just an exposure to a course, without the rigors of obtaining a good grade, 'audits' a course. The minimum requirement is normally 80% attendance, with any additional requirements as set by the instructor such as submission of assignments and minimum performance in some of the in-sem evaluations. The grade awarded is 'AU' which does not carry any grade points and therefore does not figure in SPI/CPI calculations. However, this would be restricted to a maximum of two (2) courses in the entire period of the programme. Auditing of courses during a regular semesters and summer term is permitted under the following conditions:

i.   Students in Category I and II with CPI >= 6.0 will be permitted to 'Audit' a course. 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.
ii. The 'AU' grade would be awarded by the instructor, if the attendance is satisfactory and additional requirements as set out by the instructor are met. If the attendance and performance is not satisfactory, the instructor will award a no grade.
iii. The course successfully completed in Audit mode will not be considered towards the requirement of Minor/Honors.
iv. The course successfully completed in Audit mode will be reflected in the Semester Grade Report and the Transcript as Audit Course.

4.7   Registration for Postgraduate level courses
B.Tech. students belonging to category I and II with a CPI > 6.5 may be permitted to register for some postgraduate level courses as credit/ audit course from fifth semester onwards, if they are specifically offered to them. Prior permission of the Instructor concerned is required for registration for these courses. However, no relaxation in the CPI criterion is allowed.

The students of Dual Degree, 4 year B.S. And 5 Year Integrated M.Sc. programmes, from the fifth semester onwards, are permitted to register for PG level elective courses without any restrictions.

4.8.1   Guided Study
Guided Study is doing courses out side the curriculum in the self-study like mode, during a regular semester. A student belonging to the standing category I may be provided the option of Guided study to acquire proficiency in an area of his/her choice, on recommendation of the Faculty Adviser / project guide, DUGC and approval of UGAPEC. Guided Study will be available to the extent of a maximum of one course per semester with effect from the third semester, subject to a maximum of four courses in the entire programme. This option is strictly subject to the availability and willingness of the instructor offering the course. Guided Study and URA (Sec.8) will not run concurrently, and the rules that govern overloading apply strictly even for these courses. These courses can be considered towards Minor / Honors, if so specified by the concerned academic unit. Registration, Examination / Evaluation and submission of grade etc. in case of guided study will also be governed in the similar way as other courses of the curriculum.

The option of guided study may also be made available, by the UGAPEC, in the following situations, on a case-by-case basis:

    (a) Students who miss the 'Departmental Introductory Course' due to a change of branch obtained at the end of First year,

    (b) Students who are transferred from other IITs and as a result have to do certain additional courses.

4.8.2   Self-Study

To enable a student to complete the course credit requirements at the end of th IV year for B.Tech. and the Vth year for M. Sc., or Dual Degree, a student having backlog of only one or two courses may take self-study courses after taking necessary approval from Director.

An application for self-study has to be made to Dean (AP) in the prescribed form which should be signed by the supervising teacher who may examine him from time to time, apart from an examination at the end of the course. The duration of the self-study course is between 8 and 10 weeks. The course should be completed and the grade obtained in the semester in which the registration is done. There is no carry over of the self-study course from one semester to another. The Dean (AP) will consider each application for self-study on its merits and will restrict the total number of such courses to only two during the entire programme of the student. The credits for the self-study course are the same as those for regular course and will be taken into account while calculating the total credits in a semester which should not exceed the normal load. **These courses are subject to the availability/willingness of concerned faculty members.**

The opportunities for clearing backlogs may become available through summer courses and by running courses in unscheduled semesters.

However, for the self-study option, the following directives will be followed:-

A) The self-study option will strictly be restricted only to (B.Tech/Dual degree/(5 Yr. M.Sc.) students in the summer of the final year, and for the maximum of two courses.

B) The restriction, on students with FR or XX grade in a subject not being eligible for the self-study option for that course **may be waived** the departments if only two courses are remaining for completion of degree. **Otherwise**, instructors or departments may insist that the concerned students should repeat the course in a later regular semester, without taking a course as self-study.

C) Academic standards be rigorously maintained in the self-study mode. A request for self-study option must be in the prescribed form available in the Academic office.

D) The registration, examination etc. will be as per academic calendar. The evaluation for self-study will be done in the similar way as is done for normal semester course (i.e. 50% for in-semester performance & 50% for end-semester performance).

4.9   Course substitution

In case a student obtains FR/DX grades or drops courses due to valid reason, s/he may like to substitute courses in order to complete the requirements within the stipulated duration. Following is the guideline for course substitution. :

    i.   Course substitution is not permitted for Core Courses, may it be an institute core course or departmental core course. The student has to re-register the same course and complete them.

    ii.   An Institute elective course may be substituted by another Institute elective course from the same group.

    iii. A departmental elective course may be substituted by another departmental elective course from the

same group.

4.10   Guidelines for Summer Course(s)

The summer semester is not a regular semester. However, during a summer s e m e s t e r , an academic entity may offer a summer course to enable the students to clear their backlog courses and/or regular credit courses, subject to strict adherence to the following guidelines.

i. The course instructor/(s) / faculty/(ies) should be willing to offer the course. The DUGC should recommend offering of such a summer course for consideration and approval of the Dean of Academic Programmes. The course is offered on approval of the Dean of Academic Programmes.

ii. The course is offered with adequate rigor and in the same manner as a regular semester course is offered.

iii. The duration of the course is eight to ten weeks. The registration, examination, assessment and grading etc. are done in the same way as is done for regular semester courses. The total number of contact hours for the courses remains the same as that during the regular semesters, and therefore, the courses run at an accelerated pace. (for example 6 hours of instructions per week is expected for a 3-0-0 course) The Academic Calendar in this connection is strictly followed.

iv. The dropping of a Summer Course is permitted within 7 days from the first lecture of the course. Fee is not refundable.

v. Time slots will be assigned by or communicated to the Academic Office as for the regular semester courses.

vi. A student can register for a summer course if he/she (a) has a backlog in the same course OR (b) has 3 or more backlogs in other courses and those courses are not running as summer course.

vii. The Instructors will award a FR grade to students who fail to adhere to 80% attendance for the summer course.

viii. At least 05 students should register for the summer course. The attendance record should be maintained and the minimum of 80% attendance is compulsory.

ix. The number of credits registered by a student for summer course can be upto a maximum of 18 credits depending upon the backlog.

x. Courses offered in a summer term will be treated as equivalent to a regular semester courses for all accounting purposes.

5   EXAMINATION / ASSESSMENT

Semester wise performance assessment 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 at the beginning of the course.**

Various modes of assessment for theory and laboratory courses along with the recommended relative weightage of various components are given in this section. A large departure from the recommended modes of assessments and weightage will require prior approval from the Dean of Academic Programmes.

5.1   Attendance

Attendance in the class is compulsory and is monitored. The Institute expects 100% attendance. However, due to ill-health or other emergency situations, absence up to 20% is considered on case to case basis on production of documentary proof. A student not having 80% attendance may be debarred from appearing in the semester-end examination and given a "DX" grade. Such a student is required to re-register for the same course in subsequent semesters. The attendance requirement is applicable to summer courses too.

5.2   Modes of Evaluation for Theory Courses

1. Various modes of assessment used for rating students performance in a theory course include quizzes, class tests, home assignments, group assignments, viva-voce, mid-semester test and semester-end examination. Relative weightage for in-semester evaluations is typically between 50

and 60 per cent. This will consist of one mid-semester test of two hours duration, of about 25-30 per cent weightage, to be held as per the schedule fixed in the Academic Calendar. *Two quizzes or one quiz and one test* along with assignments and viva-voce shall make 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 student. Make-up for any absence from in-semester evaluations like midsem/tests/quizzes will be at the discretion of the Instructor. Instructor needs to be convinced that the reasons for absence are genuine.

2. The semester end examination will be held as per the Academic Calendar and the relative weightage for this would be 40 to 50 per cent. It is normally of 3 hours duration and will cover the full syllabus of the course. **The semester- end examination is mandatory. The instructor awards an "II" grade for those students** 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/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. 5.7(V).

5.3   Modes of Evaluation for Laboratory Courses

The assessment in a laboratory course will be 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 semesterend 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 will normally be held a week before the final theory examinations. In case of absence from Semesterend examination, the same rules as those for theory courses is 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 DUGC/ Department. The supervisor /cosupervisor, when involved, 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. The evaluation of the seminars is completed and the grades submitted to the academic office (one week) before the commencement of the end semester examination.

5.5   Modes of Evaluation for Projects

As described in section 2, B.Tech project is not an Institute requirement. However, some departments may make it as the department requirement for the degree, and some might make it only as a component of the Honors requirement, whereas for 5 Year Integrated M.Sc., Dual Degree and 4 Year B.S. programme, the project is a required component for the award of degree. As the case may be, the separate modes of assessment are mentioned hereunder.

5.5.1   B.Tech Project

B.Tech. Project may be offered as one unit as BTP, or two independent units as BTP - I and BTP - II. Wherever it is split into two units, BTP - II builds on BTP - I, and BTP - I becomes a pre requisite for BTP – II. Departments may prescribe a minimum performance in BTP - I (which may be higher than the pass grade 'DD') for being eligible for BTP - II. BTP - I and BTP - 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 has 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. The grades are sent to the Academic office before the last date for submission of grades.

In case of irregularity of interactions, the supervisor may award an "FR" grade before the last date for

submission of the report. An "II" grade may be awarded if the student misses the presentation. S/he is granted a second chance for presentation, if the basis for absence is valid and the conditions specified in Sec.5.2 are complied with.

5.5.2 Dual Degree Projects

a) The following is the schedule for the DDP assessments:

b) For evaluation of DDP stage-I, the student has to submit a report (two or three copies as required) to the respective department on or just before one week from the date of assessment as specified in the Academic calendar. Evaluation will be done, by a panel appointed by the DUGC, based on the report and (i) either an across the able discussion and viva-voce or (ii) seminar presentation. The panel shall consist of the supervisor(s) and at least one more faculty member, to act as examiners.

c) For evaluation of DDP stage-II, the student has to submit 4 or 5 (one for co-supervisor) soft bound Dissertation reports to the respective departments on or before one week from the date specified in the Academic Calendar. The evaluation will be done by a Board of Examiners based on the report and a viva-voce. The viva-voce will be conducted by the parent department. Final Grade reports are to be sent by the Department to the Academic Section on completion of the viva-voce, as per the date specified in the Academic Calendar.

d) The Board of Examiners for DDP stage-II assessment is appointed by the Convener, DUGC, and will consist of the following:
(Ref. : 159th & 191st st Meeting of the Senate)
For DDP Stage I
i) Supervisor(s)
ii) One Internal Examiner

For DDP Stage (Final) II
The Final (II) stage assessment will be done by a Board of Examiners appointed by the DPGC/IDPC/SPGC consisting of the following:
i) Supervisor (s)
ii) Internal Examiner
iii) *External Examiner/Additional Internal Examiner in absence of External Examiner, if approved by the Academic Unit/Department.
iv) Chairperson: A Professor/ Associate Professor from another academic unit or a different specialization/ research area. The Academic Unit may decide if a Chairperson is needed for the viva or if one of the Internal Examiners can also act as a Chairperson. In case the Internal Examiner happens to be a Professor / Associate Professor, he may be designated to also serve as the Chairperson with prior approval of the Convener, DPGC.

(Ref : 210th Senate meeting).
* The presence of an External Examiner is desirable. However, in case of difficulty in finding an external examiner in the required areas, an additional Internal Examiner may be appointed in place of the external Examiner subject to the approval of DPGC/IDPC/PGC.
First stage project presentation
(Amended - Ref. 221st meeting of Senate)
In case a student gets a fail grade in the project assessment in First stage he/she should carry out additional work/modifications etc. as suggested by the panel and appear for assessment within one month from the date of previous assessment. No grade restriction will be imposed for delayed presentation/re-examination (if a fail grade is obtained in the first presentation). However, a fine of Rs. 750/- per week (upto maximum of Rs. 5000/-) to be imposed for delayed presentation.
If the student fails in this re-assessment, he/she must repeat that stage completely.

Submission of Electronic form of Dissertation/ Report (Ref: 204th meeting of senate)

Dissertations/ Report needs to be submitted in electronic form to the Central Library. Due academic approvals of the final version of the Dissertations/ Reports should be obtained from the supervisor(s) prior to finalizing the archival version of the Dissertation/ Report. The student shall submit the prescribed form for submission of dissertation/report to the academic unit/Academic Office, duly signed by the concerned, within ONE month, from the successful completion of the defence. If the copies of dissertation submitted after the due date, a fine of Rs. 5000/- per month from the due date of submission till the date of submission will be levied to the concerned student. (Amended in the 207th Senate meeting).

The final transcripts/provisional degree certificate/final degree certificate will be issued only after receipt of dissertations/reports.

e) The minimum passing grade in each stage of the project assessment shall be "CC".

f) In case a student gets a fail grade (below CC) in any of the project assessment, s/he should carry out additional work / modification etc., as suggested by the panel and appear for assessment within one month from the date of previous assessments. At this assessments he should not be given a grade higher than "CC".

g) *Whenever any project stage is not submitted before the last date as specified in the* academic calendar, the student is required to:

1. Make specific request for extension with justification (without grade restriction) upto a specific date for submission at least 15 days before the last date of submission.
2. Pay the Institute fees for the next semester.
3. Formally register for that semester.
4. Grade will be restricted to "CC" unless permitted otherwise by UGAPEC or Dean (AP) before the last date for submission.

h) After registering for DDP (either of the stages), a student should not take up any other assignment (paid or unpaid) before submitting her/his dissertation.

i) After the Dissertation is assessed, a hard bound copy of the final Dissertation along with duly completed forms is to be submitted to the Academic office. Soft copies of the Synopsis and the final Dissertation paper are to be submitted to the Central Library.

j) When a student neither drops the project in time or submit the project report for assessment by the due date nor request extension from the UGAPEC, s/he will be temporarily awarded 'II' grade at the time of finalization of grades for all the other students. The 'II' grade will be converted to a performance grade not higher than BC when such a student submits her/his report, though late, and undergo the oral examination. Further, if such late reports are not submitted within a reasonable period of time (by the end of the Summer Semester), the 'II' grade will be automatically converted to 'FR'. Students who obtain FR in the final (second stage) assessment will be required to re-register for the second stage in the subsequent semester.

Registration for Dual Degree Project is at the beginning of Spring Semester (January):

Stage I Assessment (30-36 Credits)	First September to 31st October
Stage II Assessment (36-42 Credits)	30th April to 30 June

The project reports need to be submitted 7-15 days before the date of evaluation, but not earlier.

Special cases not covered by the above schedules will be taken up by UGAPEC on case-by-case basis, upon the recommendations of DUGC.

1. If the dissertation has been submitted by the date specified in the Academic Calendar, a grace period upto 10 days after the due date of submission of dissertation may be given for conducting the viva voce (on specific requests made well in advance). In case the Supervisor is not available for a long period, an Acting Supervisor may be appointed by the Head of the Academic Unit for conduct of the final viva voce.

2. There will be no grade penalty or restriction for delayed presentation or re-examination (after failure in the first presentation) of the Dual Degree (B.Tech+M.Tech.) final stage project presentation.
3. The decision of providing Hostel accommodation for students on extension may be taken independently by the Dean (SA)/HCU.

5.5.3 Integrated M.Sc. Project and 4 year B.S. Project

5 Year Integrated M.Sc., 4 year B.S. 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.

Submission of the 5 Year Integrated M.Sc., 4 year B.S. project 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 Adviser, 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 for him/her to *make a specific request to the UGAPEC for extension, through the project guide and DUGC, 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.* The maximum grade awarded will be restricted to "BC" for such cases, unless extension had been granted by Convener, UGAPEC.

When the student neither drops the project in time and does not submits the project report for assessment by the due date nor request extension from the UGAPEC, s/he will be temporarily awarded 'II' grade at the time of finalization of grades for all the other students. The 'II' grade will be converted to a performance grade not higher than BC when such a student submits her/his report, though late, and undergo the oral examination. Further, if such late reports are not submitted within a reasonable period of time (by the end of the Summer Semester), the 'II' grade will be automatically converted to 'FR'. Students who obtain FR in the final (second stage) assessment will be required to re-register for the second stage in the subsequent semester.

Student should submit 4 soft-bound typed copies of 5 Year Integrated M.Sc., 4 year B.S. Project Report and after successfully defending the Project Report at the viva-voce examination; the original copy of the Project Report is to be submitted in hard-bound form to the coordinator.

5.6 Grading

i. Indian Institute of Technology Bombay follows grading system. Based on the combined performance in all assessments, the student is awarded a letter grade in every course taken by him/her in a particular semester as per the curriculum. These letter grades not only indicate a qualitative assessment of the student's performance but also carry a quantitative (numeric) equivalent called the Grade Point. The letter grades and their equivalent grade point are given below:

Letter Grade	Grade Point
AP	10 (Grade is awarded to students with exceptional performance)
AA	10
AB	9
BB	8
BC	7
CC	6
CD	5
DD	4
FR	0 (Fail and repeat the course)
FF	0 (Fail; for M.Sc. Ph.D. Dual Degree (Max. grade after re-exam "DD"))

XX or DX	0 (Credits are not included in CGPA Attendance below 80% - Repeat the course for core course(s))
W	0 (Course Withdrawn)
AU	0 (Satisfactory in an Audit course)
PP	0 (Passed)
NP	0 (Not Passed)
II	Incomplete (place holder, awarded on medical grounds; gets converted to an appropriate grade after Semester end re-examination else will be converted in "FR") else automatically converted to "FR"
DR	Dropped (DR is not a grade but only a position holder indicating that the course has been dropped and it has to be cleared in subsequent semesters.

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 **"FR"** and/or **"DX"**. **"II"** and **"DR"** are place holders. **"II"** is awarded temporarily on medical grounds and gets converted to an appropriate grade after the Semester end re-examination, else automatically converted to "FR". Where as **"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. **"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 end-semester examinations. **"FR" grade may also be awarded for Academic malpractices. Details pertaining to Academic malpractices are available at : http://www.iitb.ac.in/newacadhome/punishments201521July.pdf**

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

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

Option B: The Instructor decides and announces in the beginning, a system of **percentage weight** in student performance evaluation in the course, reserved specifically **for attendance and/or class participation.** Penalties in attendance and/or class participation should be reflected only in this component of student performance evaluation. The percentage weight for this 'Class Participation' Component should range from 0 to 20 percent. Assigning a zero percent weight for Class Participation automatically implied the earlier Option I – where there was no penalty for shortfall in attendance. This Option should be administered by the instructor himself/ herself.

Attendance in classes is expected from the very beginning of the semester. The student would be de-registered from those courses in which they were absent in any one of the first three lectures.

(Ref : 203rd and 208th Senate meeting)

v. **"II"** is awarded in a lecture/laboratory course if a student has satisfactory in-semester performance and has fulfilled the 80% 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 UGAPEC, 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 present 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 "FR" grade again. If the absence is due to medical / valid reasons for re-exam, the student must submit supporting documents as mentioned above, within seven days of the scheduled date of the re-exam, to the Academic Office. UGAPEC will examine such cases and convert the "II" grade into a dropped course status ("DR"). 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.

vi. 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 NCC/NSO/NSS. 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. A student will be awarded "PP" (Pass) / "NP" (Not Pass) grade for NCC/ NSO/NSS in each semester provided the minimum requirement of these activities are met during that semester together with 80% minimum attendance, failing which the "NP" (Not Pass) grade will be awarded.

vii. **'AU'** grades are awarded for those who have audited a course, and adequate exposure to the contents. No grade points are associated with this grade. It has no implication on CPI/SPI. No grade is awarded in case of insufficient exposure to the contents of the course.

5.7 Valid reasons for semester-end make-up 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 herself/himself.
2. Serious illness / Accident / Death of parent /guardian.
3. Logistic problems such as non availability of resources / lab. facilities / non 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 UGAPEC 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, UGAPEC is final in these matters.

5.8 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**

5.9 SPI/CPI
5.9.1 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 C1, C2, C3, C4 and C5 and her/his grade points in these courses are g1, g2, g3, g4 and g5 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 will not be considered for calculation of the SPI. Such additional courses undertaken and the grades earned by the student will be shown separately.

5.9.2 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 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

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

The courses which do not form the minimum requirement of the degrees will not be considered for calculation of the basic CPI. These courses will be 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.

5.9.3 Semester Grade Report

The Senate of IIT Bombay in its 221 st Meeting held on Tuesday, 28 th April 2015 consider discontinuation

of issue of Semester Grade Cards from Spring Semester 2014-15.

All students are able to see their grades as soon as concerned Course instructor /Faculty member uploads grades on the ASC. Students may use the data from their interface for the purpose of information and conveying to their parents as well, and hence, there is no need to issue the hard copies and do photocopy of Semester Grade Reports.

5.9.4 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 only contain earned pass grade (AP-DD, PP); the course will however be shown in the semester in which the student has finally cleared the course. The transcript will show only the overall CPI based on all the courses taken 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.

5.10 Display of In-semester Performance
   i. In-semester performance of all students is communicated by the instructor to the students before the end-semester examination. Those awarded "DX" grades as described in 5.7(iv) above will be clearly identified in this list.
   ii. Based on the in-semester performance, the instructor may also decide and publish a cut-off (based on the average performance of the class), below which the in-semester performance is considered 'Unsatisfactory'. This will be the basis on which an instructor may declare a "FR" grade even when a student is absent for the end-semester examination on valid grounds.

5. 11 Disclosing the Evaluated Answer scripts after Semester-end Examination.
A course instructor will allow students to see the evaluated answer scripts before finalization of grades.

5.12 Answer Script Retention period
Evaluated answer scripts are preserved by the Instructor/ Departmental Office for one semester.

5.13 Re-totaling of marks
Sufficient care is taken while evaluation of answer scripts. There is no provision of re-evaluation of evaluated answer scripts. However there is a provision for requesting a re-totaling of marks in the evaluated answer scripts on payment of **Rs.200/-** per course. Such requests will be processed by the Academic Office. **Once grades are published, changes if any will be allowed in case of totaling and tabulation errors only.** A request for re-totaling must be made by the student to Academic Office using the prescribed form, which will be sent to the instructor for further action. Student must not contact the instructor directly.

6 Change of Branch
Branch change rules effective from Academic Year 201516 for students admitted through JEE

Students are eligible to apply for a change of branch/programme after completing the first two semesters and before the start of the third semester.

   1. The Eligibility Criteria for applying for a change of branch / programme are:
   a) Completion of the prescribed course credits in the first two semesters.
   b) No backlog at the end of the first year.
   c) secured a CPI of:

-at least 8 for general and OBC category students;
and at least 7 for SC, ST and PD category students.

2. a) Before beginning the allocation, additional seats are made available in each branch, limited to a maximum of 10% of its sanctioned strength.
b) While students are allotted seats of general and reserved type during admission, this data is not used during branch change. Each available seat may be occupied by students of any category. For students of SC/ST/PD category, concession in eligibility criteria is given as per rule 1.

3. An eligible student's request for a shift from branch A to branch B will be considered valid if any one of the following two sets of criteria are satisfied.

Set 1
(a) the CPI of the student is at least 9
(b) there is a seat available in Branch B

Set 2
i) There is a seat available in Branch B.
ii) The strength in branch A, from which a change is being sought, does not fall below its sanctioned strength by more than 25%.
iii) there is no student with higher CPI who is currently being denied a change of branch to B due to rule (ii).

Procedure
Among all valid requests, a student with the highest CPI is chosen and a shift performed.

If a student with CPI x is shifted from branch A to branch B then every student with CPI x with a request for branch B will be shifted to branch B, even if their request violates (ii) above. If necessary, extra seats will be created to accommodate them.

Shifts as above are performed as long as there are valid requests.

Note that even though a student may have been allotted a seat of lower preference earlier due to unavailability of a seat of higher preference, his/her request for the higher preference seat may become valid later because of availability of seats.

4. All branch transfers can be effected only once at the beginning of the second academic year. No application for change of branch during the subsequent academic years will be entertained.
5. Students may be permitted to change from B.Tech. to Dual Degree Programme in the same department at the end of third and fourth semesters subject to the department's recommendations.

7   PERFORMANCE REQUIREMENTS
7.1   Award of degree
On successful completion of the prescribed requirements for a programme (B.Tech.; 4 year B.S.; Dual Degree (B.Tech. and M.Tech.)), the required degree will be conferred on a student in an annual convocation of the Institute.

The degree certificate will indicate the relevant branch, and specializations if any, in the engineering or science discipline in which the student has graduated. For example: Bachelor of Technology in Civil Engineering, Master of Science in Chemistry, or Bachelor of Technology in Electrical Engineering and Master of Technology in Electrical Engineering with Specialization in Microelectronics.

In those cases where the student has earned the required credits for an Honors in her/his discipline or a Minor in another discipline within the stipulated time, this will be mentioned in the degree certificate: for example:

1. B.Tech. in Metallurgical Engineering and Materials Science with Minor in Environmental Sciences and Engineering.
2. B.Tech. in Mechanical Engineering with Honors.

3. B.Tech. in Mechanical Engineering with Honours and Minor in Electrical Engineering.
4. B.Tech. in Aerospace Engineering.

For Dual Degree students.
5. B.Tech. in Chemical Engineering and M.Tech. in Chemical Engineering with Specialization (if any).
6. B.Tech. In Chemical Engineering with Minor in Electrical Engineering and M.Tech. In Chemical Engineering with Specialization (if any).

Along with the degree certificate, the student will be given a complimentary copy of transcript, giving semester-wise details of all academic accomplishments. The additional courses taken, whether earning a minor / honors or not, will be separately mentioned in the transcript. If an honors / minor is earned that will also be mentioned. 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, NSS/NSO/NCC, work visits, seminar and projects, as specified for the discipline.
c) The student should have paid all the Institute dues.
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. A CPI of 6.5 or above may be considered as a first class. **Honors is not indicative of class.**

7.2   Award of Medals
A medal be awarded to a student only **if he/ she has completed at least thirty credits beyond** the mandatory course credit requirement in that discipline.

For the **President of India Medal and the Institute Gold Medal**, the total grade points (overall total of Credits multiplied by Grade Points) for that student shall be considered. The student(s) with the highest total grade points and no academic irregularities during the Programme (underloading, failed mandatory courses, and so on) shall be considered for the award of the President of India Medal/ Institute Gold Medal. In case of a tie, the performance of (a) student(s) with a larger number of credits completed, would be deemed to be superior. In case of a tie even then, a performance where an Honours and/ or Minor is completed would be deemed superior.

An **Institute Silver Medal would be awarded in each discipline**, irrespective of the recipient of the President of India Medal. For the Institute Silver Medal, only student(s) who have competed Honours in that discipline and have no academic irregularities during the Programme (underloading, failed mandatory courses, and so on) would be considered. The student(s) in each discipline with the highest CPI, calculated based only on the **mandatory plus honours** credit requirement would be considered for the award of the Institute Silver Medal in that discipline. For Dual Degree students, since completing the Honours requirement is mandatory, the term "CPI, calculated based only on the **mandatory plus honours** credit requirement" be interpreted as "CPI, calculated based only on the **Dual Degree** credit requirement".

7.3   Early termination
Given that some of the best talents in the country take admission at this Institute, it is expected that all of them perform very well, and fully utilize the various opportunities provided for their academic advancement. However, in a few cases, students are unable to cope with the studies here. This may often be due to a lack of aptitude or a mismatch between the student's interest and what the programmes provide. Early recognition of this tendency permits corrective action to be taken in time, and the students to pursue their careers elsewhere. UGAPEC, therefore, will recommend early termination of studentship in the following situations –

1 During the first and Second year

Students having five or more FR and/or DX grades at the end of each semester (after taking into account the grades obtained in the semester – end re-examination, if applicable)

2 During the Third and subsequent years

Students are having seven or more FR and/or DX grades, at the end of each semester (after taking into account the grades obtained in the semester – end – re-examination, if applicable).

7.4   Early exit for poorly performing Dual Degree students

Early exits for poorly performing Dual Degree students is permitted after the ninth semester, if the CPI upto that point is **below** (5.00) a prescribed limit. A few students in the Dual Degree Programmes indicate inability/ disinclination to complete the Dual Degree Programme for various reasons and seek an exit with only a B.Tech. Degree. This is also what the supervisors/ faculty advisers recommend based on their observation of the student.

If a given department/ academic unit, through deliberation in the DUGC, finds that a particular student, irrespective of academic performance, is unlikely to complete the requirements of the Dual Degree (B. Tech. + M. Tech.) satisfactorily then it may recommend to the UGAPEC that the student be permitted to exit with only the B. Tech. Degree but with the following mandatory clauses:

  i.   The **academic requirements** of the B. Tech. Degree must be completed.
  ii. The student shall exit only **after** the ninth semester of the programme meaning that there is at least one semester of time penalty imposed for this exit. (this penalty is applicable even to date).
  iii. In the new curriculum, the student shall be awarded **only** the B. Tech. Degree, and not Honours or Minor(s).
  iv. The **transcript** given to the student along with the degree would mention that **the student had been admitted to the Dual Degree Programme, but was awarded a B. Tech. Degree as an exit option, due to inability to complete the Dual Degree Programme.** Of course, the degree would not mention anything of the kind.

8   UNDERGRADUATE RESEARCH AWARDS (URA)

Some students may have an inclination towards research. The Undergraduate Research Awards (URA) is designed for such students. URA will be available at three levels, all of them independent of each other. They will carry codes similar to course codes so that they can be listed in grade reports.

URA01 : for preliminary research/ developmental experience

URA02 : for B. Tech. Level Research Project.

URA03 : for Dual Degree Level Research Project

URA01: This is a recognition of a small research/ developmental effort, successfully completed by a student in the first, second or third year of an undergraduate programme – that is, a B.Tech., 4 year B.S. or a Dual Degree Programme. A faculty member must agree to supervise the student for the URA01 project. The student works with this faculty member, with the approval of the DUGC, for four-to-six month duration – including the summer or winter vacations. No formal registration is required with the academic office at this stage. If the faculty member is satisfied with the quantum and quality of work done, at any stage, s/he may recommend the award of URA01 to the student, which will then be listed in the grade card of the student in the semester immediately following the semester in which this award was recommended. No credits are assigned to URA01. URA01 can be awarded only once to a student. The grade for URA01 will be"PP".

URA02: This is to be treated as recognition of truly exceptional work, both in quality and in extent, done in the B.Tech. Project. If the committee evaluating the B. Tech. Project of a B.Tech. student believes that the student has carried out truly exceptional work in the B. Tech. Project and the quantum of work is substantially higher than what is expected, it may recommend that two more faculty members, other than those who already participated in the committee for evaluation, duly chosen by the DUGC, examine the

work done and evaluate whether a URA02 can be awarded to the student in addition to the AA grade already given. A joint recommendation must then be made by all: the original committee of evaluation and these two other faculty members that this student be awarded URA02, duly routed through the Convener, DUGC to the Convener, UGAPEC. This award, on approval by the UGAPEC, will be mentioned on the grade report of the student as URA02 carrying six credits and the grade AA. No formal registration is required with the academic office. The advantage to the student would be that his / her CPI would improve, given that these credits are with an AA grade.

URA03 (for B.Tech.) : These are to be treated as recognition of truly exceptional work, both in quality and in extent, in the Dual Degree Project. If the committee evaluating the Final Stage of the Dual Degree Project of a given Dual Degree student believes that the student has carried out truly exceptional work and the quantum of work is substantially higher than what is expected, it may recommend that two more faculty members, other than those who already participated in the committee for evaluation, duly chosen by the DUGC, examine the work done and evaluate whether a URA03 can be awarded to the student in addition to the AA grade already given. A joint recommendation must then be made by all: the original committee of evaluation and these two other faculty members that this student be awarded URA03, duly routed through the Convener, DUGC to the Convener, UGAPEC. This award, on approval by the UGAPEC, will be mentioned on the grade report of the student as URA03 carrying six credits and the grade AA. No formal registration is required with the academic office. The advantage to the student would be that his / her CPI would improve, given that these credits are with an AA grade.

9 Academic Rehabilitation Programme (ARP)

Academic Rehabilitation Program (ARP) deals with students who are unable to cope up with the academic pressure and have been performing poorly. It acts as a buffer for such students and provides them with an opportunity to stay in IIT for completion of their degree. Students having 5 and 7 backlogs at the end of first year and second years onwards respectively transferred to ARP. Such students are required to registered the courses manually with low credit in consultation with the ARP Convener. Each department would consist of one or more faculty coordinators who would be responsible for dealing with each of the ARP students.

If the students performs well in his ARP time, he is transferred back to the normal curriculum load. In case a student fails to perform in ARP, he/she is recommended for termination from the institute.

10 Helping weaker students

The students with backlogs are required to register manually. This will require them to meet and discuss their performance with the Faculty Adviser. The students with backlogs should continuously seek help from the Faculty Adviser, the student counselor, the student mentors, and the DUGC concerned and keep their parents/guardians informed about their performance. At the end of each semester, the Institute will also send semester grade report of the students / warning letter for poor performance etc. as directed by the UGAPEC (if required) to their parents/guardians by ordinary post. It is expected that the parents/ guardians, especially in the case of students with backlogs, stay in constant touch with the Faculty Advisers and if necessary, the student counselor, and keep themselves abreast of their wards' progress.

11 Allowing B.Tech. Students to leave after completing their credit requirements for B.Tech earlier than 4 years.

The Senate in its 224th meeting held on 10 th February, 2016, **approved** the proposal of allowing **B.Tech. Students to leave after completing their credit requirements for B.Tech earlier than 4 years on the basis of the following terms and conditions :**

- ➢ B.Tech. students can apply for leaving the Institute at the end of an academic semester (after three years) provided their credit requirements are met.
- ➢ The Convener, UGAPEC may approve the Credit Completion certificate. The students be given credit completion certificate after clearance of all dues.
- ➢ These students will be awarded their degree in the ensuing Annual Convocation as scheduled in Academic calendar.

- The passing date would be the date UGAPEC approves the results, which will be the date to be mentioned on Transcripts.
- The duration of programme would be still mentioned as 4 year B.Tech programme.
- Re-registration as a student will not be permitted. These students can register for placement opportunities, but would not get hostel facilities during their placement activities.

12   Revised Criteria for M.Sc.- Ph.D Exit Policy for the students in CESE.

The Senate in its 224th meeting held on 10th February, 2016, **approved** the proposal of revised **criteria for M.Sc.- Ph.D Exit Policy for the students in CESE. The details of the proposal is as below :**

- Only M.Sc-Ph.D. students with CPI equal to or greater than 7.5 after the third stage project examination (i.e., CPI equal to or greater than 7.5 including third stage project grade), and who have been awarded a project grade equal to or greater than 'BC' for the third stage project examination, will be eligible to continue to Ph.D. programme, provided they are willing to continue for the same. The students fulfilling the above mentioned criteria but who are not willing to continue to Ph.D. programme will be eligible for EXIT M.Sc. degree.
- For M.Sc. students with CPI less than 7.5 after the third stage project examination, but who have been awarded a project grade equal to or greater than 'BC' for the third stage project examination, the student may request for one additional chance (one semester for course work) for improving CPI equal to or greater than 7.5. Only after receiving the recommendation of the Examination Committee followed by concurrence of PG-CESE, the Centre may permit one more semester of course work in exceptional cases. In such cases, if the student achieves CPI equal to or greater than 7.5, he/she will be eligible to continue to the Ph.D. programme; however, if the student fails to achieve CPI equal to or greater than 7.5, he/she will not be able to continue to the Ph.D. programme, but will be eligible for EXIT M.Sc. degree.
- Students who have been awarded a project grade of "CC" or lower for the third stage project examination will not be able to continue for PhD programme, irrespective of the CPI. However they would be eligible for EXIT M.Sc. degree after fulfilling the institute requirements.

A student with two or more FR grades in M.Sc. part of the curriculum would be eligible only for EXIT M.Sc. degree after fulfilling the institute requirements.

13   Admission procedure for the Dual Degree (B.Tech+M.Tech.) Program. in Dept. of Computer Science & Engineering.

The Senate in its 224th meeting held on 10th February, 2016, approved the proposal of procedure for conversion of B.Tech. Student to the Dual Degree (B.Tech+M.Tech) programme in Dept. of CSE. The details of the procedure is as follows :

- A B.Tech student can apply to convert to the DD program anytime from the beginning of semester 7 till the registration of semester 8.
- The Student must submit a plan to finish all B.Tech credits and the honours credit requirement by the end of the 4th Year.
- At the time of conversion, the student must choose a willing faculty member as the guide for the DDP.
- The student must do a R&D project or a BTP with the chosen guide during the 8th Semester.

The DDP can be exited by the student anytime if he or she so wishes.

14   Utility
➔ Duration of Programme
1) Bachelor of Technology (B.Tech.) = Four Years
2) 4 Year Bachelor of Science (B.S.) = Four Years
3) Dual Degree (B.Tech. + M.Tech.) = Five Years

→ The Institute follows grading system on a scale of 10.00, which cannot be converted into any other scale or percentage simply by multiplying or dividing with a factor. Cumulative Performance Index (C.P.I) of 6.50 and above out of 10.00 at the end of programme is considered as First Class for Undergraduate.

→ 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 for students graduating in May, 2016 onwards.

→ The medium of instructions at this Institute is in English.

→ Opportunity for additional learning is provided through Minor/Honours courses to be done by interested/eligible students to the extent of one course per semester w.e.f. the third semester. Credit for the courses done under additional learning is not included for SPI/CPI calculation.

15   Glossary

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

DUGC : Departmental Under-Graduate Committee

UGPC : Under-Graduate Programmes Committee

UGAPEC : Under-Graduate Academic Performance Evaluation Committee

CRF : Course Registration Form

CAF : Course Adjustment Form

FA : Faculty Adviser

Semester : Two semesters in an academic year, approximately of 16 weeks duration each, the first one (Autumn Semester) from the last week of July to last week of November and the second one (Spring 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, FR, DX, II, PP or NP Grade. DX or FR indicates that the student has to repeat the course. DR indicates course dropped.

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 place holder, 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.

URA : Undergraduate Research Award.

Minor : A credential earned by a student, optionally, by earning a total of 30 specified credits in addition to the minimum prescribed for the degree, in a focused area different from her/his discipline

Honors : A credential earned by a student optionally by earning a total of 24 specified credits in addition to the minimum prescribed for the degree, in her/his parent discipline.

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

Audit course : Course taken by a student for exposure only and carries no grade points.