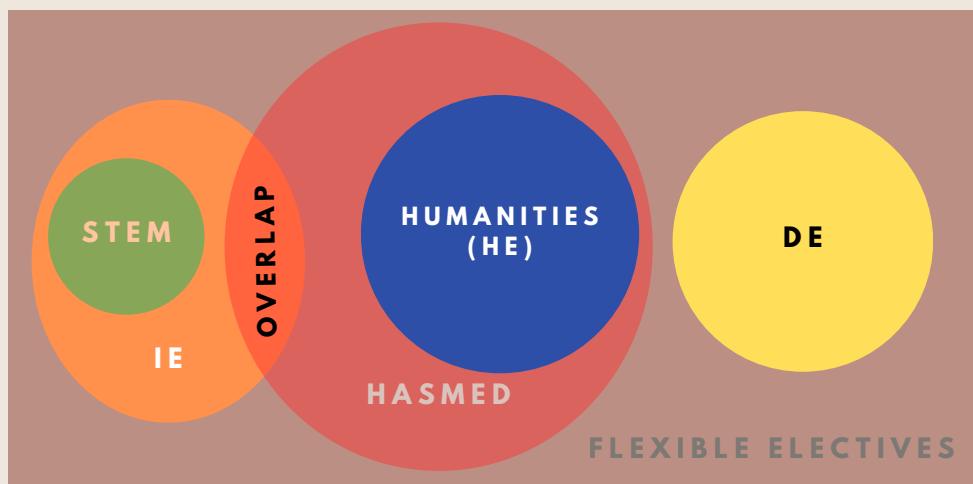


CHEMICAL ENGINEERING HANDBOOK

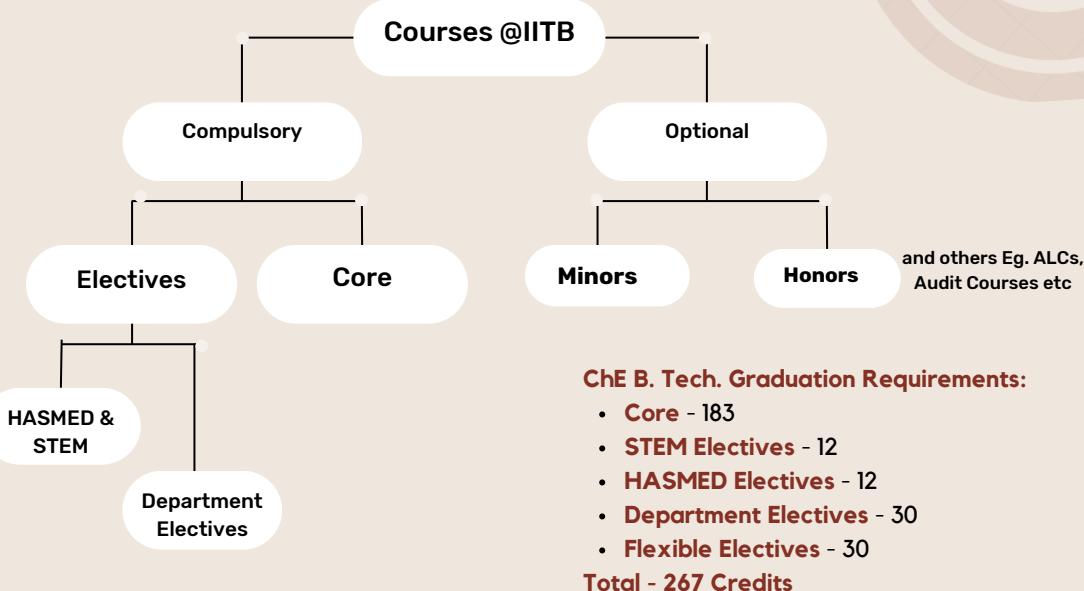


NEW VS OLD TERMINOLOGY



- Institute Electives (IE) & Humanities Electives (HE) and DE are part of old nomenclature.
- STEM, HASMED & Flexible electives have been introduced as the new terminologies.
- Department Electives (DE) remain unchanged !

TYPES OF COURSES AT IITB



COURSES AT IITB

CORE COURSES

Core courses are those set of courses which you have to do **compulsorily** for obtaining your degree. These courses count towards your final degree in all respects and count in your **CPI (Cumulative Performance Index)**. These courses are **NOT optional** and have to be completed within the stipulated duration of your coursework (**4 or 5 years**). There are departmental core courses (Ex. CL 101, CL203 etc.) and institute core courses (Ex. CS 101, DE 250, ES 200, HS 200 etc.). These come by default to your course registration form on Internal ASC during registration.

ELECTIVES

Each programme (B.Tech, Dual Degree, M.Tech, Int. M.Sc.) at IIT Bombay includes **elective courses** in its curriculum. These electives allow students to explore courses of **their own choice** and interest.

Types of Electives:

1. Humanities and Social Sciences (HSS) Electives (Old Terminology):

- All undergraduates must complete an **HSS elective** in their **third year**. Options include:
 - HS 301 - Philosophy
 - HS 303 - Psychology
 - HS 305 - Reading Literature
 - HS 307 - Sociology

2. Department Electives:

Students choose advanced-level courses (e.g., **4xx or 5xx**) from Chemical Engineering Department. In some cases, courses from other departments may be tagged as department electives with approval from the concerned department.

3. Institute Electives (Old Terminology):

Students choose courses from **departments other than their own**.

- **Restrictions:** Generally, **1xx courses** are not allowed.
- It should not be the core course of the department which has offered the course.

4. STEM Electives (New Terminology):

These are courses related to Science, Technology, Engineering and Mathematics.

- **Restrictions:** Generally, **1xx courses** are not allowed.
- It should not be the core course of the department which has offered the course.

5. HASMED Electives (New Terminology):

These are courses related to Humanities, Arts, Sociology, Management, Entrepreneurship and Design.

- All ENT and MG courses have been approved by DUGC to be tagged as HASMED. However, for other set of courses (DE, HS, ES, EC, SOM, PS etc.) that don't come under any of STEM or DE, you need to get it approved by the DUGC via the GSec.

Note: Electives are **part of the curriculum** and count towards the **CPI**. These do not come by default on your course registration form unlike core courses, you need to add these by yourself during registration.

COURSES AT IITB

ADDITIONAL LEARNING COURSES (ALCs): Students may take extra courses within the permissible maximum credit limits:

Key points:

- ALCs can be credited or audited.
- Grades in ALCs do not count towards CPI/SPI.
- Courses can be re-tagged during the re-tagging period.

AUDIT COURSES

Audit courses allow students to attend a course for knowledge only, without worrying about grades. So, even these are not counted towards CPI.

Key points:

- A maximum of two courses can be audited during the entire programme.
- Only Category I and II students can audit courses after taking prior approval of the instructor.
- Attendance and basic evaluation requirements set by the instructor must be fulfilled.
- The course will appear on the transcript with an "AU" grade and with "AU" Tag.

SIT-THROUGH COURSES

If you wish to attend a course for **knowledge only** but cannot register due to constraints, you may **sit through** the course with the instructor's permission.

Key points:

- No formal **registration** takes place. So, these are not counted towards credit limits.
- The course will **not appear** on your transcript.

SELF STUDY COURSES

Self-study courses are typically for **final-year students** (post 8th semester or after expiry of program duration) who need to complete mandatory credits.

Key points:

- A maximum of **two courses** can be taken in self study mode.
- Professors provide study materials, doubt sessions, and exams. Normal grading applies.
- It is registered by submitting the self study form to the department office: [Form Link](#)
- **Fees:** ₹2000 for General/OBC/EWS, ₹1000 for SC/ST per course.
- **Details:** It runs usually between the 2nd week of May and the 2nd week of July.
- **Process:** After submitting Self Study form to department office, you will receive a mail from academic office asking for payment before registration. You need to go and generate a payment request from the Academic Office (main building 2nd floor), then go and make payment in the cash section (**offline payment is mandatory**) after showing the payment request, and provide the receipt to the Academic Office. Once processed, course will reflect on ASC.
- Registration and evaluation **follow the academic calendar** (either during normal semester or during summer term), with standards similar to regular semester courses.

COURSES AT IITB

GUIDED STUDY COURSES

- Purpose: Allows **Category I** students to pursue non - core courses in a self-study mode during regular semesters.
- Requires recommendation from Faculty Adviser/Project Guide, DUGC, and UGAPEC approval.
- Limit: Maximum **one course per semester** starting from the third semester, **up to four courses** in the entire program.
- It is subject to the availability and willingness of the instructor.
- Rules: Cannot be taken concurrently with URA; standard credit load rules apply.
- Credits: May count towards Minor/Honours if specified by the academic unit.
- Process:** Registration, evaluation, and grading follow the same process as regular courses. This form must be filled before registration and submit to the prof: [Guided Study Form](#)

SUMMER COURSES

Summer courses allow students to clear backlogs or complete pending credits.

Key points:

- Eligibility:** Any student with a backlog. However, if student has registered for at least two backlog courses in summer then the student is allowed to take a course in advance in which he/she is not having a backlog .
- Credits:** A maximum of **24 credits (4 courses)** is allowed per summer.
 - Extension students may take **unlimited courses** if offered.
- Attendance:** **80% attendance** is mandatory. An **FR grade** will be awarded otherwise.
- Dropping:** A summer course can be dropped within **7 days** of the first lecture.
- Students need to pay **9000 INR** per summer course on **External ASC** under Payments section after registering for the course via **Internal ASC** under Registration/Adjustments. Timeline for all these can be known by referring academic calendar. You need not do any offline formality in this !
- Running summer courses can be seen on internal ASC by selecting **semester as 3**.

(C) SCHEDULE OF SUMMER TERM

Sem/Sr.	Event	Date (Day)
3.1	Last date to receive list of summer courses from academic units	30 April 2025 (Wednesday)
3.2	Display of Summer courses list on ASC	07 May 2025 (Wed)
3.3	Registration	14 May 2025 (Wednesday) – 19 May 2025 (Monday)
3.4	Instruction begins	20 May 2025 (Tuesday)
3.5	Last date for course adjustment	27 May 2025 (Tuesday)
3.6	Last date of Instruction	12 Jul 2025 (Saturday)
3.7	Term-end final exam	13 Jul 2025 (Sunday) – 17 Jul 2025 (Thursday)
3.8	Last date for showing evaluated answer scripts	19 Jul 2025 (Saturday)
3.9	On-line submission of grades	13 Jul 2025 (Sunday) – 20 Jul 2025 (Sunday)

Schedule of Summer Term (C)

The following are the key events and deadlines for the summer term, along with their respective dates:

1. Last Date to Receive List of Summer Courses from Academic Units

Date: 30th April 2025 (Wednesday)

2. Display of Summer Courses List on ASC

Date: 7th May 2025 (Wednesday)

3. Registration

Dates: 14th May 2025 (Wednesday) to 19th May 2025 (Monday)

4. Instruction Begins

Date: 20th May 2025 (Tuesday)

5. Last Date for Course Adjustment

Date: 27th May 2025 (Tuesday)

6. Last Date of Instruction

Date: 12th July 2025 (Saturday)

7. Term-End Final Exam

Dates: 13th July 2025 (Sunday) to 17th July 2025 (Thursday)

8. Last Date for Showing Evaluated Answer Scripts

Date: 19th July 2025 (Saturday)

9. Online Submission of Grades

Dates: 13th July 2025 (Sunday) to 20th July 2025 (Sunday)

COURSES AT IITB

NPTEL/SWAYAM COURSES

Students may take online courses through platforms like **NPTEL/SWAYAM**.

Key points:

- A maximum of **2 electives (12 credits)** can be taken via NPTEL for any student at IITB.
- Extension/ARP students can complete **24 credits** of electives as well as **core courses** via NPTEL with **DUGC recommendation**.
- Courses are registered on ASC **after passing** the exam.
 - **12-week courses** → 6 credits & **8-week courses** → 3-4 credits
- Grades are **not included** in CPI calculations, grades are given out of **100**.
- **Process:** One needs to submit the NPTEL course mapping request signed by the Faculty Advisor as well as course instructor to the DUGC via GSec for approval. After approval, the student needs to register and pay the exam fees **1000 INR** on SWAYAM portal. After completion of course student needs to submit the **NPTEL form** along with printed certificates of course completion signed by the Instructor, Faculty Advisor to DUGC via GSec which will be sent to academic office for reflection of course on ASC.
- Sample Course Mapping (**NPTEL Form**): [Form Link](#)
- The course code for all such courses is **O-IITB**.

Typical Timeline NPTEL/SWAYAM COURSES : One must visit the SWAYAM portal for timelines and strictly follow that, a typical timeline has been given below.

Jan 2025 Timelines

	4 weeks (SET 1)	8 weeks (SET 1)	12 weeks	4 weeks (SET 2)	8 weeks (SET 2)
Start of course	Jan 20, 2025	Jan 20, 2025	Jan 20, 2025	Feb 17, 2025	Feb 17, 2025
End of course	Feb 14, 2025	Mar 14, 2025	Apr 11, 2025	Mar 14, 2025	Apr 11, 2025
Exam dates	Mar 22/23, 2025 2 Sessions on each date 9am-12 noon; 2pm-5pm			Apr 26/27, 2025 May 3/4, 2025 2 Sessions on each date 9am-12 noon; 2pm-5pm	
Possible additional Exam Dates	Mar 21, 2025			April 23,24,25, 2025 May 2, 2025	
Open enrollment to the course	Nov 15, 2024				
Close enrollment to the course	Jan 27 2025 5pm			Feb 17 2025 5pm	
Open exam registration form	Dec 16, 2024 - 10am				
Close exam registration form	Feb 10, 2025 5pm / Feb 14, 2025 5pm			Feb 20, 2025 5pm / Feb 24, 2025 5pm	

MINORS

A **Minor** is an additional optional academic credential or degree that a student can earn by completing **30 credits** (typically five 6-credit courses) in a discipline other than their major **field** of study in the B.Tech program.

1. Eligibility Criteria

- Each unit offering minor prescribes a specific set of courses and/or projects required to earn a minor degree.
- Students are eligible to pursue a Minor starting from the **3rd semester**.
- Dual Degree (DD) students in categories I and II can begin registering for Minor courses from their 2nd year till their 10th semester.

2. Completion Criteria

To earn a Minor:

- Students must complete 30 credits of approved courses within the minimum time limit of their degree program.
- Students need to complete five courses of 6 credits each under the specific Minor discipline.
- If a student is unable to complete the required 30 credits, the Minor will not be awarded. However, the individual courses completed will still reflect in the student's transcript.

The Minor credential will be mentioned in the degree certificate as:

"Bachelor of Technology in Chemical Engineering with Minor in [Minor Discipline]."

It will also be reflected in the transcript, along with the list of courses taken.

3. Selection Criteria

- Students must pre-register for Minor courses. Allocation is done based on CPI (Cumulative Performance Index), subject to:
 - Course prerequisites
 - Seat availability
- Note: CPI for Minor courses is independent of the CPI for Major courses. This means the performance in Minor courses will not affect your Major CPI.

4. Minor Pre-Registration Process

The pre-registration process for Minor courses follows these steps :

- Course Selection:
 - You need to log into the External ASC portal to view the list of available Minor courses for the semester under Forms/Requests tab.
 - You can indicate your preferences for multiple courses.
 - You must check the pre-requisites of the course you are planning to pre-register.
- Course Allocation:
 - Allocation is done based on CPI and seat availability and you will be able to see your allocated minor course just before the actual registration on Internal ASC.
- Waitlist:
 - If a course is full, a waitlist is maintained in decreasing order of CPI and if a student drops an allotted Minor course, the first student on the waitlist will be registered.

For details of courses and feedbacks, you can refer to the [course info booklet](#) nicely compiled by the UGAC.

HONOURS

Honours is an additional optional academic credential or degree earned by completing **24 extra credits** in the student's **major discipline**. It signifies deeper expertise in the core area .

1. Eligibility and Completion Criteria

To earn an Honours:

- You must complete **24 credits** through **four courses** (each carrying 6 credits) before your final year.
- The courses include:
 - **2 compulsory core honours courses:** CL336 and CL325
 - **2 honours elective courses:** Chosen from the department's offerings.
- It is generally recommended to **start Honours courses in the 5th semester** to ensure timely completion, you can refer the recommended [ChE course plan](#) with honours.
- You need not register separately for honours, courses registration that you are planning to take as honours is also done along with other courses on Internal ASC.
- **Degree Certificate:** "Bachelor of Technology in Chemical Engineering, with Honours."
- **Transcript:** Along with the list of Honours courses completed.

2. Selection Criteria

- Departments set a **minimum CPI cut-off** for Honours course allocation.
- **Note:** The CPI for Honours courses is **independent** of the Major CPI. Performance in Honours courses will **not affect** your Major CPI.

3. Honours for Dual Degree (DD) Students

- **Dual Degree students** are compulsorily required to complete the Honours requirements as prescribed by the department.

The total of 387 credits are required for a Dual Degree student:

- **B.Tech.:** 267 credits
- **Honours:** 24 credits
- **Project:** 72 credits
- **Masters Courses:** 24 credits

SUMMARY OF COURSES AT IITB

Type	Meaning	CPI Impact
Core Courses	Mandatory courses for degree completion, can't be substituted	Count in CPI
Minor Courses	Optional 30 credits in a discipline other than major to get an extra degree.	Separate minor CPI
Honour Courses	Optional 24 credits (B.Tech) for specialisation in the same discipline to get an extra degree.	Separate honours CPI
Institute Electives (Old Terminology)	Courses from departments other than your own.	Count in CPI
HSS Electives (Old Terminology)	Humanities courses in the third year.	Count in CPI
STEM Electives (New Terminology)	Science, Technology, Engineering & Mathematics related courses which are mandatory to be done but are chosen based on interest.	Count in CPI
HASMED Electives (New Terminology)	Humanities, Arts, Sociology, Management, Entrepreneurship and Design related courses	Count in CPI
Flexible Electives (New Terminology)	All electives including STEM, HASMED and Department electives come under this superset.	Count in CPI
Department Electives	Advanced-level courses from your department.	Count in CPI
ALCs	Extra courses for learning.	Do not count in CPI
Audit Courses	Exposure to a course without grades.	Do not count in CPI
Sit-Through Courses	Permission to attend a course without registration or grades.	Do not count in CPI

COURSE REGISTRATION

1. Pre-Registration Phase:

- Duration: Typically conducted **one week** before registration opens. (**Refer Academic Calendar**)
- Scope:
 - **High-demand electives** (e.g., ENT electives) and **Minor Courses**.
 - **Some Department electives** (e.g., CL6001, CL 678 etc.), get the list from GSec.
 - Generally courses are allocated based on CPI or professors choice of students.
- Where to Pre-Register: On **External ASC under Forms/Requests**.
- Prerequisites:
 - **Semester fees** and at least the **first instalment** of SMA must be paid via external ASC.

2. Registration Phase:

- Duration: Conducted from end of December for even sem and end of **July** for odd sem for all courses.
- Portal: On **Internal ASC under Academics >> Registration >> Registration/Adjustments**.
- Steps:
 - Pre-registered courses (e.g., electives and minor courses) will be **preloaded**.
 - Additional courses (not part of pre-registration) as well as pre-reg courses with vacant seats will be available on a **First-Come-First-Serve (FCFS)** basis.
- Key Notes:
 - Registration Deadline: You must submit the course registration form before the final date (see academic calendar) to confirm registration. A **confirmation email** will be sent upon successful submission. Failure to submit the registration form may result in missing registration.

3. Adjustment Phase:

- Duration: Runs for approximately **10 days** post the registration phase.
 - You can **add/remove/change course tags** (in limited cases).
 - Adjustments can be made **multiple times**, but submitting the updated course registration form is required.

5. Course Withdrawal Phase (Without 'W' Grade):

- Duration: Opens **2 weeks** after the course instruction begins phase ends.
- Scope:
 - Students can **withdraw courses** but cannot add new ones.
 - Courses withdrawn during this phase will not carry a 'W' grade and won't show up on the transcript.

General Instructions for Students:

- **Pre-Registration:** There is **no need to rush** for pre-registration since all pre-registered courses will remain available until the deadline.
- **Registration:** Be prompt while registering for courses during the registration phase, especially for **FCFS** courses.
- **Confirmation:** Ensure you submit the registration form at least once before the registration deadline to finalize your course selections.
- **Compliance:** Pay semester fees and first SMA instalments before the specified deadline..

COURSE TAGS

Courses offered by the institute, such as Minors, Electives, ALCS, and others, are assigned specific tags to indicate their designation on the transcript. These tags help in categorizing courses based on their type and role in the curriculum.

TYPES OF TAGS

THE FOLLOWING CODES ARE USED TO DENOTE DIFFERENT TYPES OF COURSES:

- **C:** CORE COURSES
- **I:** INSTITUTE ELECTIVES
- **D:** DEPARTMENT ELECTIVES
- **M:** MINOR COURSES
- **O:** HONOURS COURSES
- **H:** HUMANITIES ELECTIVES
- **T:** ADDITIONAL LEARNING COURSES (ALC)

For instance, Minor courses are assigned the tag **M**, while Honours courses are tagged as **O**. This tagging system ensures consistency and clarity in course categorization across academic records.

Note: No, special tag has been given for STEM or HASMED electives till now !

RETAGGING

- Each course is initially tagged by the student during registration. Students are provided with two opportunities to modify these tags:
- **First Re-Tagging:** This can be done during the second-to-last semester.
- **Second Re-Tagging:** This can be done during the final semester.
- It is important to note that a course that has been re-tagged during the first opportunity cannot be re-tagged again during the second. Additionally, core courses cannot be re-tagged under any circumstances.

TAG CODE	TAG DESCRIPTION	CHANGEABLE INTO
C	Core Course	Not Changeable
I	Institute Elective	T
D	Department Elective	O, T
M	Minor Course	I, T
O	Honor Course	D, T
H	Humanities Elective	T
T	ALC	D, I, O

DUAL DEGREE CONVERSION

ELIGIBILITY AND REGISTRATION

- Students interested in the Dual Degree program must register for and complete the additional Honours courses.
- Application for conversion is allowed only at the end of the **7th semester** typically in 2nd week of November.

APPLICATION PROCESS

- Submit the application via a reply to the mail of DD conversion sent by DD coordinator (currently Prof Jhumpa Adhikari: adhikari@iitb.ac.in)
- Some applications may include recommendations and may be discussed in the DUGC (Department Undergraduate Committee) as part of the evaluation process.

CPI CRITERIA FOR CONVERSION

- **DIRECT CONVERSION:**
 - Students with a **CPI ≥ 7** with no backlogs are eligible for direct conversion.
- **SPECIAL CASE CONVERSION:**
 - Students with a **CPI < 7** with no backlogs, who have completed three Honours courses, may apply for conversion.
 - A faculty member who has taught or supervised a project conducted by the student must provide a recommendation.
 - The final decision is made by the DUGC.
- Detailed course plan: [Click Here!](#)

JOINT MASTERS

- Eligibility
 - Open to BTech undergraduate students chemical students.
 - A **CPI ≥ 7** is required to apply.
- Funding and Financial Support
 - Selected students will receive **full financial support** covering both stipend and tuition fees for the Master's degree after completing the BTech degree.
- Program Structure
 - Duration and Stipends:
 - First 7 months: Stay at the University in St. Louis with stipend (**2500 \$ Per month**).
 - Next 4 months: Stay at IIT Bombay with an IITB stipend.
 - Credit Hours:
 - The program includes **30 credit** hours of study and research.
- Post-Master's Opportunities
 - Students have the option to apply for admission into an accelerated PhD program after completing the Joint Master's degree.
- **Three degrees** are awarded post completion of this: B.Tech & M.Tech from IITB and MSc from Washington University.

PROFESSORS INVOLVED:

INDIAN INSTITUTE OF TECHNOLOGY

1. Prof. Jhumpa Adhikari (IITB Program Coordinator ChemE) - Contact her for any query !
2. Prof. Srinidhi Balasubramanian
3. Prof. Indrajit Chakraborty
4. Prof. Abhishek Chakraborty
5. Prof. Ravindra Gudi
6. Prof. Harish Phuleria (IITB Program Coordinator ESED)
7. Prof. Venkatasailanathan Ramadesigan (IITB Program Coordinator DESE)
8. Prof. Manoranjan Sahu
9. Prof. Swatantra Pratap Singh
10. Prof. Bharatkumar Suthar

IDDDP (INTER-DISCIPLINARY DUAL DEGREE PROGRAM)

- Application Eligibility and Timeline
 - Students can apply for IDDDP (Integrated Dual Degree and Diploma Program) at the end of the 6th semester.
 - Applications are submitted via External ASC under the Forms and Requests section.
- Semester Plan Submission
 - Applicants must submit a detailed semester plan as part of the application process.
- CPI Criteria for Entry: No Active Backlogs
 - Direct Entry to M.Tech:
 - If $CPI \geq 7$, direct entry to M.Tech is allowed.
 - Special Case Entry:
 - If $CPI < 7$, entry is generally not permitted.
 - In special cases, an LoR (Letter of Recommendation) is required to support the application.
- Approval Process
 - The application is reviewed and approved in the following sequence:
 - FACADS: Faculty Advisors approve the IDDDP application via External ASC.
 - Home Branch DUGC: The application is then discussed in the applicant's home department DUGC (Department Undergraduate Council).
 - Second Department DUGC: Finally, the application proceeds to the second department's DUGC for review and approval.

APPLICATION PROCESS : [IDDDP.pdf](#)

Typical IDDDP TIMELINE for an YEAR(2023) : Opening of online application form for students to apply ->24 May 2023 to 5 June 2023 → Online recommendations by Faculty Advisor of 'Home' department -> 26 May 2023 to 12 June 2023 → Online approval/rejection of the applications by Convener of DUGC of "Home" Department -> 26 May 2023 to 14 June 2023 → Approval/ rejection of the applications by Convener of DUGC/DPGC "Host" Department -> 15 June 2023 to 26 June 2023 → Decision on applications by Convener, UGAPEC -> 10 July 2023

SEMESTER EXCHANGE PROGRAM

ELIGIBILITY AND COURSE MATCHING

- Students can opt for courses in foreign universities that match the courses offered at IIT Bombay.

APPLICATION TIMELINE

- Each semester, the Dean IR Office, IITB publishes a [list](#) of MoU signatories
- For the Spring Semester, the list is floated in August.

FINANCIAL RESPONSIBILITY

- Students are responsible for managing their own finances for the exchange program.

COURSE MAPPING AND SEMESTER PLANNING

- Students must plan their semester and map courses in consultation with their Faculty Advisor.
- Refer to the [application template](#) for details

ALTERNATIVE COURSE OPTIONS

- If certain courses cannot be mapped, students may substitute them with NPTEL courses.

GRADING AND TRANSCRIPTS

- SemEx grades:
 - Are not included in total CPI calculation but are considered for grade completion.
- Foreign grades:
 - Are displayed on the transcript as they are, without conversion.

DECLARATION FORM

- Students must sign and submit the declaration form to the Dean IR Office.

Form Link: [SemEx Declaration form.pdf - Google Drive](#)

PROJECTS IN CHEMICAL ENGG.

The Chemical Engineering Department offers **three** types of projects during the semester:

1. **SLP:** Supervised Learning Project - A credited research project directly done under a professor on individual basis.
2. **SLP-IDP:** Supervised Learning Project in Industrially Defined Problems - A credited industrial research project done in a group of three students under professor/s and an industry mentor as guide.
3. **BTP:** B.Tech. Project - A credited research project directly done under a professor on individual basis. B.Tech thesis submission is required.

Each of these projects is worth **6 credits** and are optional. Only one project is allowed per sem.

1. Course Codes

- **SLP/SLP-IDP:**
 - **CL443** for Odd Semester
 - **CL445** for Even Semester
- **BTP:**
 - **CL495** for Odd Semester
 - **CL494** for Even Semester

2. Eligibility

- **SLP:**
 - Open to all 4th-year students and Category 1 students of 3rd-year.
- **SLP - IDP:**
 - Open to all 4th-year students and all 3rd-year students not necessarily in category 1.
 - CPI based selections are done.
- **BTP:**
 - Open to final-year students only.

3. Registration Process

- **SLP:**
 - Project topics are floated to students **via email** (Prof Picardo) typically **2 weeks** before registration.
 - You need to register **CL 443/445** on **Internal ASC** like other courses during the registration period.
 - The **SLP registration form** must be filled out and submitted to the department office within **2 weeks** of the start of the semester. Form Link: [SLP Form](#)
- **BTP:**
 - Project topics are floated to students **via email** (Prof Gundabala) to Final year students before the commencement of the **7th and 8th semesters**.
 - You must register using the course codes **CL494/495** for the respective semester like other courses during registration period. Just like SLP, you need to submit [BTP form](#).
- **SLP-IDP:**
 - You need to register **CL 443/445** on **Internal ASC** like other courses during registration period.
 - The **SLP-IDP Pre-registration google form** must be filled out which is typically floated by the GSec on mail around **3 weeks** before the registration.

TAGGING RULES FOR PROJECTS

1. Regular SLP and BTP can **always** be tagged as Additional Learning Courses (T)
2. Regular SLP can be tagged as **honors elective (O)** without any approval.
3. BTP **CANNOT** be tagged as honors elective (O).
4. Both Regular SLP and BTP can be tagged as Department Electives (D) only if a written statement approved by the guide is submitted after the completion of the project, testifying that the project is done with sufficient consistency and rigor. It is suggested that Regular SLP/ BTP be registered as an Additional Learning Course (T) initially. It can be retagged later with **post-facto approval** of the guide.
5. **SLP-IDP** can be tagged as Department Elective (D), Honors Elective (O) OR Additional Learning Course (T)
6. A **maximum of 3 out of 5** department electives can be BTP/ SLP/ SLP IDP.

EVALUATION OF PROJECTS

- **SLP:**
 - The student is to be examined at the end of the semester by a **panel** consisting of the **supervisor and at least one examiner** (another faculty member of our institute) based on the report and presentation. An overall grade is recommended in the SLP evaluation form.
- **SLP - IDP:**
 - The teams would be evaluated based on **weekly presentations** and comprehensive mid-semester and end-semester presentations in presence of the instructor(s), faculty mentor and the industry mentor.
 - A significant amount of weightage is reserved for the submission of **mid-semester and end-semester reports**.
- **BTP:**
 - The student is to be examined at the end of the semester by a **panel** consisting of the **supervisor and at least one examiner** (another faculty member of our institute) based on the report and presentation. An overall grade is recommended in the BTP evaluation form.

PUNISHMENTS

ACADEMIC AND EXAMINATION RULES AND ASSOCIATED PENALTIES

- Categories of Decision Authorities
 - D-ADAC or DUGC: Departmental Academic Disciplinary Action Committee (for minor or department-level issues like FR or DX).
 - ADAC: Academic Disciplinary Action Committee (handles repeated or severe violations).
- Rules for Proxy Attendance
 - A student whose proxy attendance has been marked will not be given a DX, However, the student who marked the proxy if caught will receive a DX as punishment.
- Leaving After Marking Attendance
 - If a student marks their attendance and then leaves:
 - First Violation: Warning.
 - Second Violation: FR (Fail in the course).
- Impersonation in Exams
 - The impersonating student will face semester suspension.
- Submission of False Pink Slips (Falsification of Data)
 - Submitting a falsified pink slip (e.g., altered data or forged details):
 - Penalty: Suspension for a year.
- Copying in Assignments or Labs
 - If students copy in a home assignment or lab work:
 - Penalty:
 - Zero marks for the particular assignment.
 - 1-grade penalty for both the student who copied and the one who allowed copying.
- Rules During Examinations (Be it Midsem/Endsem or even Quizzes)
 - Verbal Communication:
 - 1-grade penalty if evidence of communication is found.
 - If similar answers or identical mistakes or any other solid proofs are detected, FR will be assigned to both students.
 - Use of Chits, Phones, or Other Aids:
 - Penalty: FR in the course.
 - If you are found carrying a mobile phone but not using it then a grade penalty is awarded. However, this liberty given only for mobile phones, not for other unauthorized materials.
- Repeated Violations
 - All punishment decisions for repeated violations are escalated to ADAC (higher-level committee).
 - The ADAC has the authority to impose stricter punishments as seems necessary.
- Scribbling on ones Hands or any other body parts:
 - Punishment is an FR, even if the scribbled content is not related to the exam. So, make sure that you check your hands before entering the exam hall.

SCHOLARSHIPS AT IIT BOMBAY

Financial Support Opportunities for Students

Mail id for ug scholarship - ugscholarships@iitb.ac.in

TIMELINE

- Applications Open: Odd Semester (July - November)
- Fee Reimbursement: Processed during the Odd Semester
- Even Semester Fees: Payment not required if scholarship is approved

DOCUMENTS REQUIRED

Generally → Previous year academic records, Income certificate, Caste Certificate , Bonafide certificate (for private scholarships).

APPLICATION PORTAL

• INTERNAL ASC:

- Portal for applying to MCM, Named Scholarships, Free Messing Scholarships, and Fee Remission

Internal ASC (<https://asc.iitb.ac.in/acadmenu/>) → Academic → Academic/Personal Details → Update/Apply for Scholarship

• NSP (NATIONAL SCHOLARSHIP PORTAL):

- For National-level scholarships, primarily for SC/ST students

Apply from here → <https://scholarships.gov.in/>

Verification of documents will done by both IITB Scholarship unit and their state nodal officer

Note:- you must have to submit physical copy of all documents in ug scholarship section.

TYPES OF SCHOLARSHIPS

1. MERIT-CUM-MEANS (MCM) SCHOLARSHIP

Merit Criterion: For first-year B.Tech., Dual Degree, and B.S. students, JEE (Advanced) AIR or UCEED Rank applies, while subsequent years rely on the prior year's academic performance.

Income Limit and Benefits for UG Students

- Up to ₹1 Lakh
 - Women: Tuition fee exemption, ₹40,000/year scholarship, ₹10,000/year Women Merit Scholarship.
 - Others: Tuition fee exemption, ₹40,000/year scholarship.
- Above ₹1 Lakh up to ₹3 Lakhs
 - Women: Tuition fee exemption, ₹30,000/year scholarship, ₹10,000/year Women Merit Scholarship.
 - Others: Tuition fee exemption, ₹30,000/year scholarship.
- Above ₹3 Lakhs up to ₹5 Lakhs
 - Women: Tuition fee exemption, ₹20,000/year scholarship, ₹10,000/year Women Merit Scholarship.
 - Others: Tuition fee exemption, ₹20,000/year scholarship.

Link : https://www.iitb.ac.in/newacadhome/MCM_UG.pdf

2. FACILITIES OF FREE MESSING (FOR SC/ ST CATEGORY STUDENTS)

All SC/ST UG students are exempted from tuition fees, get free messing (basic menu), pocket allowance of ₹500/month (10 months/year), and hostel room rent waiver; women also receive an additional ₹10,000 Merit Scholarship.

Link : https://www.iitb.ac.in/newacadhome/Free_Messing_UG.pdf

3. REMISSION OF FEES

Eligibility: Applicable to B.Tech, Dual Degree, B.S., and B.Des. students with gross parental income \leq ₹5,00,000 per year (no deductions).

Benefits:

- Income < ₹1 Lakh: Full tuition fee remission.
- Income ₹1–5 Lakhs: 2/3rd tuition fee remission.

Documents: Submit a Parental Income Certificate from the previous financial year annual.

Link : https://www.iitb.ac.in/newacadhome/Remission_Fees_UG.pdf

4. NAMED SCHOLARSHIPS

Managed by the Office of the Dean, Alumni & Corporate Relations, these scholarships are awarded based on JEE (Advanced)/UCEED rank in the first year and academic performance in subsequent years.

Link : https://www.iitb.ac.in/newacadhome/Named_Scholarship_UG.pdf

5. NSP SCHOLARSHIP

Offered through the National Scholarship Portal, this scholarship supports students based on eligibility criteria like income, merit, and category.

Useful links :

https://www.iitb.ac.in/newacadhome/FAQ_Scholarship.pdf

CERTIFICATES

BONAFIDE CERTIFICATE

- To certify that you are associated with IITB as students/instructors/staffs
- Application issued by registrar , it usually takes 1-2 days.

Procedure to apply : There will be a form in the Acad office (Main building , 2nd Floor)→ UG section . Just fill the form and Submit it

Bonafide Sample - [Bonafide Certificate Form](#)

TRANSCRIPT

A transcript is an official record of a student's academic performance, including courses taken and grades received.

Transcript Request

- Fees:
 - ₹200 for current students
 - ₹500 for alumni
 - ₹1000 for older alumni (hard copy)
 - ₹1000 for electronic copy

Procedure to apply :

Fill the form from acad office(Main building, 2nd floor) → go to transcript section → they will give you draft for payment → after that you have to pay it in cash section either via cash/ UPI → and again submit the receipt back to transcript office

Transcript – [Transcript Application](#)

NO-OBJECTION CERTIFICATE

No-Objection Certificate :

The No Objection Certificate (NOC), issued by the Dean of Academic Programs, is required by companies before offering a letter to confirm the student is not involved in any malpractices.

Apply from dean AP office

Or

you can contact academic superintendent (Sudhir Dhoble) as well for this

His email id - sudhirdhoble@iitb.ac.in

Sample - [NOC Form](#)

CONVERSION CERTIFICATE (PROOF OF CONVERSION FROM CPI TO %)

Your academic performance in percentage is often required for jobs or higher studies. In such cases, converting CGPA to percentage needs proof, usually provided as an official document from your institute. This ensures accuracy and prevents discrepancies.

There is no provision to issue personalized certificate for grade conversion.

However, there is common certificate for this purpose.

[Certificate_cpi_to_percentage](#)

PROVISIONAL DEGREE

Note: This certificate is a temporary document indicating you're not yet a B.Tech graduate but is required by companies for placement purposes.

PROVISIONAL DEGREE PROCESS

To obtain a provisional degree, follow these steps:

1. Complete graduation requirements via External ASC.
2. Submit the Convocation Form (convocation fees must be paid before submitting).
3. Ensure tags are frozen and graduation status is updated.
4. Once the status is confirmed, you can apply for the provisional certificate.

DUES

DUES CLEARANCE

To clear dues, follow these steps:

1. Complete payment through External ASC.
2. Check the no-dues status.
3. There are 8 types of dues:
 - Dean SA, Hostel, Department Office, Academic Office, SAU, Gymkhana, Library, Estate Office.
 - Ensure all dues are settled at least 1 week before the convocation.

Check through external ASC → Payment → Check No Dues Status

Ask them to update this ASAP otherwise they will update it on very last dates before deadline



ROOM RETENTION

ROOM RETENTION PROCESS:

- Submit an application to the Dean of Student Affairs (Dean SA) with a valid reason.
- If professors are involved, both you and the professor must sign the application.
- The application should mention, "The hostel fees for this duration will be paid by students/professors."

After getting signed from dean SA , submit it to HCU office (Main building, -1 floor)

- The HCU office will email your status to the hostels.
Hostel fees is Rs. 3400/month



SLP

A semester-long supervised project involving computational, experimental, or learning-based topics proposed by faculty.

ALLOTMENT PROCESS:

1. Eligibility:

- Open to third-year B.Tech students (CPI > 8.0) and fourth-year B.Tech/DD students.
- Students cannot register for both SLP and BTP in the same semester.

2. Topic Proposal:

- Faculty propose topics in the preceding semester by a specific deadline.
- Each topic must include:
 - Defined scope of work.
 - Method of evaluation.

3. Approval:

- Topics must be approved by DUGC before circulation.

4. Selection:

- Students meet faculty members to finalize topics based on mutual agreement.
- Faculty can choose to supervise a student or decline, with a limit of two students per faculty member.

5. Registration:

- Students submit a signed form (student and faculty) in the prescribed format to the Head's office before the deadline.

6. Finality of Decision:

- Faculty decision regarding supervision is final.

EXAMINATION:

- At semester-end, students are evaluated by a panel comprising:
 - The supervisor.
 - At least one examiner (another institute faculty member).
- Evaluation is based on:
 - Report.
 - Presentation.
- An overall grade is recommended.

SLP - IDP

SLP IDP involves semester-long projects provided by industries, focusing on solving commercial-scale problem statements.

ALLOTMENT PROCESS:

1. Eligibility:

- Open to third-year B.Tech, fourth-year B.Tech, and post-graduate students.
- Students must register for either:
 - CL 443: Supervised Learning I (Autumn semester) or
 - CL 445: Supervised Learning II (Spring semester) to enroll in SLP IDP.

2. CPI Cutoff:

- The cutoff varies each semester depending on the number of shortlisted problem statements and student intake requirements.

3. Team Formation:

- Instructors decide the number of participants per project; typically, three students per problem statement form a team.

4. Allotment Criteria:

- Problem statements are allocated by instructors based on:
 - The knowledge and skills of participating teams.
 - The difficulty of the problem statement.

5. Confidentiality Requirement:

- Students must sign Non-Disclosure Agreements (NDAs) with the industries before commencing work.

6. Final Decision:

- Faculty decisions on team composition and project allotments are final.

7. Presentation Requirements:

- Teams must deliver:
 - Weekly presentations.
 - Comprehensive mid-semester and end-semester presentations.
- Presentations will be conducted in the presence of:
 - Instructor(s).
 - Faculty mentor.
 - Industry mentor.

8. Report Submission:

- Significant weightage is assigned to mid-semester and end-semester reports, which should detail the progress and outcomes.

9. Participation:

- Weekly participation in discussions is mandatory, and evaluation includes:
 - Timely attendance at weekly meetings.
 - Active involvement during discussions.

10. Grading Policy:

- Higher weightage is given to mid-semester and end-semester presentations compared to weekly presentations.
- The exact grading policy is at the discretion of the instructors.

ID CARD RE-ISSUE PROCESS

To apply for an ID card, follow these steps:

1. Visit the ID card office.
2. Collect the application form.
3. Fill out the form accurately and submit it.
4. Pay the required ID card fee of **300 INR** at the office.
5. Collect the payment receipt for your records.

The process typically takes up to one week to complete

Credit Extension Application

Category 1 students should submit detailed applications in the first request. Note that credit extension is generally not approved by the Dean of Academic Programs unless a valid reason is provided.

Fee Payment

Fee payment is mandatory for registration in the next semester; failure to pay will result in ineligibility for registration.

Fee Payment Process :

Pay directly through External ASC → Payment Section → via UPI or SBI Payment Gateway.
After paying the academic fees, you will be able to see the mess fees payment link there.

Through Bank Loan/Scholarships : Go to External ASC → Bank Loan/NEFT Fee Payment, generate a demand draft, and submit the transaction ID on the sample form after payment. Note that the generated demand draft is valid for 10 days. Note: It is advised to complete payments through loans at least 15 days before the deadline.

ALL the Links and References:

Self-Study Course Registration Form and Details

Access the official self-study course registration form, fee details, and complete process guidelines for final-year students here:
[https://drive.google.com/file/d/1Ka5ffxqqjvyKZ3cJZQwKcnLsGSHokBDC/view?
usp=sharing](https://drive.google.com/file/d/1Ka5ffxqqjvyKZ3cJZQwKcnLsGSHokBDC/view?usp=sharing)

Guided Study Course Registration Form and Details

Access the official guided study course registration form, eligibility criteria, and detailed process guidelines here:
[https://drive.google.com/file/d/1w4eodKJCtucRFTjXl8w7y9kQb7RYH2e0/view?
usp=sharing](https://drive.google.com/file/d/1w4eodKJCtucRFTjXl8w7y9kQb7RYH2e0/view?usp=sharing)

NPTEL/SWAYAM Course Mapping Form

Access the official NPTEL/SWAYAM course mapping form, including details on registration, approval, and credit reflection here:
[https://docs.google.com/spreadsheets/d/1Br9Wst6QMtepFVe0lzZTDZmge5qCHQfv/edit?
usp=sharing&ouid=100522544834421002176&rtpof=true&sd=true](https://docs.google.com/spreadsheets/d/1Br9Wst6QMtepFVe0lzZTDZmge5qCHQfv/edit?usp=sharing&ouid=100522544834421002176&rtpof=true&sd=true)

UGAC Course Info Booklet

Explore detailed course information and student feedback compiled by UGAC here:
[https://drive.google.com/file/d/12oWtpdx2T2u4-1AOyJku3f5csguJ2B5C/view?
usp=sharing](https://drive.google.com/file/d/12oWtpdx2T2u4-1AOyJku3f5csguJ2B5C/view?usp=sharing)

Honours Program Course Plan

Refer to the recommended Chemical Engineering Honours course plan, including eligibility and credit requirements, here:
[https://drive.google.com/file/d/107UyC2d-uJLteldBBCxPaHzxhkcG37z_/_view?
usp=sharing](https://drive.google.com/file/d/107UyC2d-uJLteldBBCxPaHzxhkcG37z_/view?usp=sharing)

Dual Degree Conversion Details

Find the detailed Dual Degree conversion guidelines, eligibility criteria, and application process here: [https://drive.google.com/file/d/107UyC2d-uJLteldBBCxPaHzxhkcG37z_/_view](https://drive.google.com/file/d/107UyC2d-uJLteldBBCxPaHzxhkcG37z_/view)

Joint Masters Program Details

Access comprehensive information about the Joint Masters Program, including eligibility, structure, funding, and post-graduation opportunities here:
https://drive.google.com/drive/folders/1raWGksGwHtD07cu6PqE_86FRtorom3CD

IDDDP Application Form and Details

Find the application form and detailed process for the Inter-Disciplinary Dual Degree Program (IDDDP) here: <https://portal.iitb.ac.in/asc/IDDDP.pdf>

Semester Exchange MoU Signatories List

Access the updated list of Memorandum of Understanding (MoU) signatories for the Semester Exchange Program here:
[https://docs.google.com/spreadsheets/d/1Qj32siqEtN0enEBoAC9Ww6U83Su_i2pd/edit?
gid=1576337165#gid=1576337165](https://docs.google.com/spreadsheets/d/1Qj32siqEtN0enEBoAC9Ww6U83Su_i2pd/edit?gid=1576337165#gid=1576337165)

Access the Semester Exchange Program application template, including course mapping and financial responsibility guidelines here:
<https://drive.google.com/file/d/13HnD8jFxjmb60fIXPST5h1mejqEcCm-I/view>

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Semester Exchange Declaration Form

Find the official declaration form for the Semester Exchange Program here:
https://drive.google.com/file/d/1oaLFWUY4ciYgll_h1sArTalVH5XTgZUU/view

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SLP Project Registration Form

Find the official registration form and detailed process for registering Supervised Learning Project (SLP) here:
<https://drive.google.com/file/d/17iLpxJuYf9AaMy2cFoR3c0a5onMqaRfY/view?usp=sharing>

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BTP Project Registration Form

Access the registration form and guidelines for the B.Tech. Project (BTP) here:
<https://drive.google.com/file/d/1EVKyBfZTA4qwRBjsDSnKL7fZaZNiQ1h4/view?usp=sharing>

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NSP Scholarship Portal

Apply for National-level scholarships through the National Scholarship Portal here: <https://scholarships.gov.in/>

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Merit-Cum-Means (MCM) Scholarship Details

Find eligibility criteria, income limits, and benefits for the Merit-Cum-Means Scholarship here: https://www.iitb.ac.in/newacadhome/MCM_UG.pdf

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Facilities of Free Messing for SC/ST Students

Access detailed information on free messing facilities and allowances for SC/ST category students here: https://www.iitb.ac.in/newacadhome/Free_Messing_UG.pdf

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Remission of Fees Details

Find the eligibility criteria and benefits for tuition fee remission here:
https://www.iitb.ac.in/newacadhome/Remission_Fees_UG.pdf

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Named Scholarships Information

Explore details about scholarships managed by the Dean, Alumni & Corporate Relations office here:

https://www.iitb.ac.in/newacadhome/Named_Scholarship_UG.pdf

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NSP Scholarship Details

Access detailed eligibility criteria and guidelines for NSP Scholarships here:
https://www.iitb.ac.in/newacadhome/FAQ_Scholarship.pdf

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Bonafide Certificate Form
Find the official Bonafide Certificate application form here:
[https://drive.google.com/file/d/1afepB7hIft5EA2SLZT89cf_vwfkSyfUc/view?
usp=drive_link](https://drive.google.com/file/d/1afepB7hIft5EA2SLZT89cf_vwfkSyfUc/view?usp=drive_link)

Transcript Application Form
Access the official Transcript Application form, including details on fees and application process, here:
[https://drive.google.com/file/d/1QDT06AIj9ndkpIArphQlTpMhCPV-80w/view?
usp=drive_link](https://drive.google.com/file/d/1QDT06AIj9ndkpIArphQlTpMhCPV-80w/view?usp=drive_link)

No-Objection Certificate (NOC) Form
Find the official NOC application form and detailed process here:
[https://drive.google.com/file/d/1yJy5rVkJPDnKTFEaRgdiib1iADhuuM3qj/view?
usp=sharing](https://drive.google.com/file/d/1yJy5rVkJPDnKTFEaRgdiib1iADhuuM3qj/view?usp=sharing)

CPI to Percentage Conversion Certificate
Access the standardized certificate for CPI to percentage conversion here:
[https://drive.google.com/file/d/11bgs00Ty2Z8HP5wGTv5zv9W18wlf9M/view?
usp=drivesdk](https://drive.google.com/file/d/11bgs00Ty2Z8HP5wGTv5zv9W18wlf9M/view?usp=drivesdk)



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Rules & Regulations for Undergraduate Programmes

**Applicable to the B.Tech., B.S., B.Des.,
Dual Degree students admitted from the
Academic Year 2007 - 2008**

Updated: December, 2023

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

Therefore, rules are colored with one of three colors.

1. The color green indicates that the final authority for rule is the Convener DUGC
2. The color yellow, and underlined means that the final authority is Associate Dean (Academic Programme)/ Dean (Academic Programme)
3. The color yellow, without an underline means that the Convener, UGAPEC is the authority.
4. The color blue means that the final authority is the Senate
5. The rule which is uncolored, is to be implemented strictly

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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 conducting research, imparting education, and training in various fields of Science and Technology. The Institute is now recognized as a leader in science and engineering education worldwide. It has established a firm foundation for education and research with 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 more than 1000 candidates for the undergraduate programmes (B.Tech./ Dual Degree and B.S.) through the Joint Entrance Examination (JEE), more than 30 candidates for B.Des. Programme through the Undergraduate Common Entrance Exam for Design (UCEED), around 300 candidates for the M.Sc. and the M.Sc. Ph.D. Dual Degree programmes, more than 1000 candidates for postgraduate programmes and around 300 candidates for Ph.D. programmes. IIT Bombay follows a 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 term during summer, called the Summer Term, for summer courses. Students are required to meet specified academic requirements each semester.

This booklet provides comprehensive information on the Rules and Regulations for B.Tech., Dual Degree, B.S. and B.Des. Programmes.

IIT Bombay gives freedom to its various academic units 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 new technical developments and to allow students some freedom to explore topics of their interest, IIT Bombay revised its Undergraduate Programmes curriculum (w.e.f. the Academic Year 2013). The revised curriculum, 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. Student's attention is brought particularly to the assessment procedures and the specific rules governing the grading system, academic performance requirements etc.

IIT Bombay offers its students best opportunities that are needed to create outstanding scientists and engineers. We hope that you will strive hard to utilize the resources available to fully develop your potential as an engineer/ scientist/ designer /economist/ social scientist.

We wish all our students a very bright future and a successful career.

Dean of Academic Programmes

1. INTRODUCTION

The B.Tech./ Dual Degree/ B.S. 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.

The second phase is the study of engineering sciences and technical arts (such as workshop, engineering graphics, etc.). This study imparts 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 across 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 vary from discipline to discipline.

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

B.S. programme students, in addition, work independently on a project in their last two semesters.

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, reading and interpreting research papers, use of engineering and scientific equipments/ instruments, modern computational techniques, writing technical and scientific reports and effective communication.

Apart from the minimum credit requirements for the award of the degree, opportunities exist 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/ Honours.

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

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

The curriculum for various programmes are available on the Institute website: www.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 Chairperson (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.

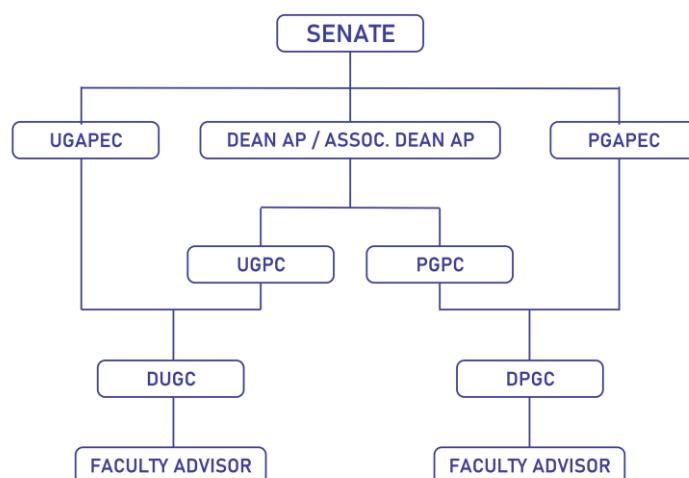
The Senate continuously assesses the academic programmes and makes appropriate revisions/ modifications/ improvements as and when required through two Institute level Senate sub-committees: **The Undergraduate Programmes Committee (UGPC)** for undergraduate programmes and a **Post- Graduate Programmes Committee (PGPC)** for post-graduate 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, the performance and evaluation related issues are 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, the Department Undergraduate Committee (DUGC) and the Department Postgraduate Committee (DPGC). The DUGCs and DPGCs handle all academic matters, related to both academic programmes as well as performance of individual student. The Head of the Department is the convener of both these departmental committees. The Senate as well as its sub-committees also have student representatives. **Administrative backup for all academic matters is provided by the Academic Office, with a Joint/ Deputy Registrar (Academic) as in-charge.**

On joining the Institute, each student is assigned a **Faculty Adviser** from his/her Department. Students must consult the Faculty Adviser on any matter relating to their academic performance and the courses they may take in various semesters/ summer terms. The Faculty Adviser guides the students to complete their courses of study for the required degree in a timely manner, while maintaining good academic performance.

All academic issues connected with the B.Tech., Dual degree, B.S. and 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. The Academic Calendar can be seen on the Academic Office website of the Institute: (<http://www.iitb.ac.in/newacadhome/toacadcalendar.jsp>)

2 CURRICULUM / PROGRAMME OF STUDY

2.1 Curriculum

Every Department has a prescribed course structure which, is known as the Curriculum. It prescribes the courses, labs and other requirements for award of the degree and sets out the nominal sequence semester-wise. It also gives the syllabus and a list of texts and reference books for each course. The Curriculum details are updated every semester and are made available at the Institute website.

2.2 Semester – Autumn, Spring, Summer

The Institute follows a 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/May) is known as the **Spring Semester** or Semester 2. During the summer vacation, i.e., (May-June), a few courses are offered as part of Summer Term (refer Sec. 4.8). These courses can be taken by students as per summer term guidelines.

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/ other academic activity are dependent on the number of hours of work expected to be put in by the student 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 i.e. **C = 2xL + 2xT + P**. A student is expected to spend, on average, one hour every week outside class for every lecture/ tutorial held that week. Two examples of credit calculation are shown below:

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, if a theory course is shown as, say, **CE304 Soil Mechanics II: 2 1 0 6**, it means that CE304 is the course code, Soil Mechanics II is the course title and 2 1 0 6 corresponds to L T P C respectively.

Other academic activities consist of a Seminar, Projects, which carry credits and NSO/ NSS/ NCC, in which only a pass (PP) or no-pass (NP) grades are awarded.

2.3.2 Course Equivalence (*Ref: 251st Senate Meeting*):

Addition of course equivalence for core courses will be permitted on approval of DUGC of respective Academic Units.

2.3.3 Seminars

Some departments prescribe a Seminar as a requirement for B.Tech./ B.S./ B.Des. or the Dual Degree. **A 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 and understand different aspects of the problem. Finally, the results from literature must be summarized in a written report and presented before a designated committee of faculty members. **Seminars typically carry 3 credits.**

2.3.4 Projects

2.3.4.1 B.Tech. Projects (BTP - I and BTP – II)

Some departments prescribe Project as a requirement for the B.Tech. degree, or as a requirement for Honours (refer Sec.2.5.2), wherein under the guidance of a faculty member a student, in the sixth semester or later, is required to do innovative work with the application of knowledge gained from 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 design, analysis, experimentation etc. These projects (BTPs) may be offered as a single unit of 12 credits (BTP) or as 6 credits of BTP-I followed by BTP-II of 6 credits or 12 credits. (*Ref: 241st Senate Meeting*)

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 can find suitable supervisor (s) to guide her/him.

2.3.4.2 B.S. Project (*Ref: 240th Senate Meeting*)

Some departments prescribe a B.S. Project as a requirement for the B.S. degree. Such a project is carried out under the guidelines of a faculty member and may carry 6 or more credits as prescribed by the department.

2.3.4.3 Dual Degree Project (DDP)

The Dual Degree Project is a mandatory requirement of the Dual Degree Programmes. The project consists of two stages, spread over fourteen months, 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 under the guidance of supervisor/ s, in-depth analysis of an engineering problem and attempts synthesis of a solution. Literature survey, problem analysis and problem definition, extensive experimental/ modeling/ computational work and analysis of results typically form various components of the project work. **A DDP (B.Tech.-M.Tech.) 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 Service Scheme (NSS) is a mandatory requirement for all students for the award of a 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 (Ref: 233rd Senate Meeting)

Depending on the discipline, **the minimum credits required for the award of a B.Tech. / B.S. / B.Des. degree are between 266 and 282** (till 2021 batch), 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 "B.Tech. + M.Tech. Dual Degree programme" should have all of the following components over and above the corresponding basic B.Tech. curriculum:

- a) B.Tech Honours credit a minimum of 24 credits that can comprise of either only courses or a combination of courses and a Project. The Project duration can be of two semesters with a maximum of 18 credits.
- b) 24 credits consisting of four masters level courses.
- c) 72 credits of a 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 who may have dropped mandatory courses, such rescheduling may even become necessary. Such departures from suggested schedules need to be done very carefully, and always with approval of the Faculty Adviser.
- d) In addition to the DD requirements, if a student completes 24.0 credits towards the honors of the parent department, then he/ she will be considered for award of B. Tech./ B.S. with honors of the parent department subject to the recommendation of DUGC of the parent department (2021 batch onwards).

2.5 Opportunities for Additional Learning: MINOR, HONOURS, ETC.:

The B.Tech./ Dual Degree/ B.S. programmes recognize the fact that students' aspirations and the demands of the work place, have become highly diverse. Every student has specific abilities, interests and career goals.

Each programme prescribes the 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, vary between 266-282 (till 2021 batch) 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.

The curriculum is designed to permit B.Tech., B.S. and B.Des. students, who are not identified as academically weak, to optionally take additional courses. The freedom to take about six credits every semester after the first year, permits a student to satisfy her/his interests / abilities and aspirations.

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 (refer Sec.6.8.4)**. They can also credit courses in specific areas which can qualify as a minor/ honours. 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.

2.5.1 Minor

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

A student must pre-register for a minor course 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 programme, the minor will be awarded.

This will be mentioned in the Degree Certificate as "**Bachelor of Technology in xxx with Minor in yyy.**" This 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 are often limited, one has to compete for a place in every course. **If 30 credits are not completed for Minor then 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.

The Senate in its 224th meeting approved the proposal of allowing Dual Degree students to undertake minor courses. These rules were further modified in the 236th meeting of the Senate.

DD students of category I and II can register for minor courses from 2nd year onwards. These students are allowed to take additional courses (within permissible credit limit) in their 9th and 10th Semesters, if needed to complete the minor requirement. (**Ref: 239th Senate Meeting**)

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 set of courses for earning Honours. Honours is not indicative of class.

Students can accumulate credits by registering for Honours courses prescribed by the department. On successful accumulation of 24 credits at the end of the programme, this will be mentioned in the Degree Certificate as "Bachelor of Technology in xxx, with Honours." This 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 B.Tech. student. This requirement is over and above the basic requirements for the B.Tech. degrees as prescribed by each department. The total credit requirement (till 2021 batch) is therefore 266-282 (B.Tech.) + 24 (Honours) + 72 (Project) + 24 (Masters courses).

2.5.3 More than one minor for students (Ref: 259th Senate Meeting)

Students can opt for earning additional minor/s (i.e. an Honour and a minor, OR if time table permits, two or more minors). Students should discuss this with their faculty advisers since completing more than one minor would involve significant overload.

3. 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 the students to complete their courses of study for the required degree. For effective utilization of the opportunities for additional academic accomplishments, the planning of an individual's academic journey needs careful consideration, and hence constant consultation with the Faculty Advisers are imperative. The Faculty Adviser is the person whom the parents/ guardians should contact for performance related issues of their wards.

The role of the Faculty Adviser is outlined below:

- a)** Guide the students about the rules and regulations governing the courses of study.
- b)** Advise the students to register for courses as per the curriculum and their academic standing.
- c)** Approve the registration of the students.
- d)** Pay special attention to weak students and carefully monitor the performance of students recommended for the slow track option.
- e)** Advice students on Course Adjustment / Drop during the Semester within the stipulated time frame given in the Academic calendar.

- f) Advice students seeking a semester drop about rules and regulations laid down for this purpose and recommend these cases to the UGAPEC through the DUGC, for consideration.
- g) Consider and recommend to the DUGC, applications for course/ credit requirements for the students for exchange programmes. In addition, the faculty adviser converts the grades from the foreign institute to IIT Bombay as per senate approved rules.
- h) To ensure that students are not permitted to re-register for courses, which they have already passed.
- i) Inform students that grades will not be awarded for any academic activity (course/ Lab./ seminar/ project/ non-credit requirement etc.) without approved registration.
- j) Strictly warn students that if s/he fails to register during any semester without prior approval, his/her studentship is liable to be cancelled.

4. REGISTRATION

Registration at the beginning of each semester, as per 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. All students' registration has to be approved by his/ her faculty Adviser. Some courses may also require instructor consent.

4.1 Semester-Wise registration

On joining the Institute, each student is assigned to a Faculty Adviser or an Advisory group (refer Sec.3). 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 Curriculum 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 (refer Sec. 5.1). 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.

4.2 Procedure for Registrations

The Institute 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.

4.2.1 Online Registration

The online 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 as per permissible load (refer Sec. 5.2). Grades will not be awarded for any

academic activity (course/ Lab./ seminar/ project/ non-credit requirement etc.) without approved registration.

4.2.2 Late Registration

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

4.2.3 Registration for the first two semesters (except B.Des.)

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 (refer Sec. 10).

4.2.4 Registration for third and subsequent semesters

The prescribed credits per semester is given in the course bulletin of the respective academic units. From the third semester onwards, registration is dependent on the academic standing of the student. A student with an academic standing of Category I, II, III and IV may register for additional courses over and above the prescribed credits in the course bulletin with the approval of Faculty Adviser subject to Section 5.2.

4.3 Registration for Institute Elective Courses:

An Institute Elective course can be any credit course across the Institute provided that;

- a) It should not be from the Academic Unit in which the student is registered.
- b) It should not be 'Core' or 'Department Elective' course in the curriculum on the programme in which the student is registered.

An Institute Elective course should be registered in consultation of Faculty Advisor.

4.4 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. One of NCC, NSO or NSS, is a mandatory requirement for the award of degree. 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.

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 (refer Sec.6.8.4)

4.5 Registration for Projects

4.5.1 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. are specified by the concerned department before the commencement of the semester.

4.5.2 Registration for Dual Degree Projects (DDPs)

- a) The total duration for the DDP is fourteen months. DDP consists of two stages. Credits for Stage I are 30-36 and for stage II are 36 to 42. The information about project registration, presentation/ submission/ assessment and submission of grades is given below:

Project Stage	Registration	Submission/Presentation/Assessment to be completed during the following period	Submission of Grades to the Academic Office on or before
Stage I	Registration for stage I will be done in January (8th Semester)– As per academic calendar	By October Month (9th Semester)– As per academic calendar	October/ November of the same year (9th Semester)– As per academic calendar
(Final) Stage II	Registration for stage II will be carried out along with the grade report for the stage I – As per academic calendar	By June Month (Just after 10th Semester) – As per academic calendar	July of the same year (Just after 10th Semester)– As per academic calendar

- b) 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.
- c) 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 (refer Sec. 6.4.2)

4.5.3 Registration for B.S. Project (*Ref: 240th Senate Meeting*)

Registration for B.S. Projects as specified in the curriculum, is similar to that for any other course. The details of allotment of topics, faculty supervisors etc. are specified by the concerned department before the commencement of the semester.

4.6 Course Adjustment/ Dropping of courses

- a) The Academic Calendar sets a date, typically one week 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 bounds (refer Sec. 5.2). Course adjustment has to be done in consultation with the Faculty Adviser.
- b) If in the second or any of the subsequent semesters, a student finds her/his academic load too heavy, s/he may drop some courses in consultation with the Faculty Adviser, provided the minimum credit requirements (18 credits) are fulfilled. The last date for such drops is typically 20-30 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.

4.7 Dropping of a Semester:

- a) 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, in consultation with the Faculty Adviser and with permission from the DUGC/UGAPEC.
 - 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, in consultation with the Faculty Adviser and with permission from the DUGC/UGAPEC, prior to the commencement of the semester itself.
- b) 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.
- c) A student will be not permitted to drop a semester after the award of DX/ II grade/(s) and/ or semester end examination.
- d) Such breaks from studies is typically not permitted for a continuous period in excess of one year.
- e) Not registering for any semester before the last date for registration without prior approval of the UGAPEC may result in the UGAPEC recommending dropping that semester. (*Ref: 240th Senate meeting*)
- f) Hostel accommodation and other institutional facilities will not be extended in any semester for which the student has not registered.

4.8 Registration for Additional Courses (Minor, Honours etc.): (*Ref.- 236th Senate Meeting*)

Any student may register for minor or Honours courses subject to satisfying the pre-requisites for the respective courses. The number of students permitted for Minor courses is to be specified before the registration date by the department, and the allocation is done on the basis of CPI. Students are permitted to register for Minor courses only during the pre- registration period .

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 must register for at least 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 basic degree are completed.

4.9 Summer term Course Registration:

Running of courses in summer term and registration of students to these courses must follow the guidelines mentioned below:

- a) The course instructor/(s) 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.
- b) The course should be offered with adequate rigor and in the same manner as a regular semester course is offered. The registration, examination and assessment, course duration and grading should adhere to the timelines in academic calendar. 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 (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.
- c) The dropping of a Summer Course is permitted within 7 days from the first lecture of the course. Fee is not refundable.
- d) Re-exam is permitted on the same terms and conditions like that of regular semester courses.
- e) Time slots will be assigned by or communicated to the Academic Office like that of regular semester courses.
- f) A student can take up to a maximum of 24 credits of Mandatory Courses (Core + HSS + Department & Institute Electives) in which s/he has received FR/DX/DR/W grade. However, if a student accumulates two (or more) "FR" in Mandatory Courses and does not find enough courses (totaling up to 24 credits) in a summer term, s/he can take a maximum of two Mandatory Courses in which s/he has NEVER registered. (**Ref: 239th Senate Meeting - effective from Summer term 2019-20.**)
- g) Courses requiring pre-requisites need instructor's approval in case the student has not completed the pre-requisites. (**Ref: 239th Senate Meeting - effective from Summer term 2019-20.**)
- h) NO restrictions (i.e. #f) will apply after the expiry of the regular programme duration (4 years for B.Tech, B.Des. and B.S., 5 years for DD). (**Ref: 239th Senate Meeting - effective from Summer term 2019-20.**)
- i) At least 05 students should register for the summer course. The attendance record should be maintained and the minimum of 80% attendance is compulsory. The Instructors may award a "FR" grade to students who fail to adhere to 80% attendance for the summer course.
- j) Courses offered in a summer term will be treated as equivalent to regular semester courses for all accounting purposes.

5. 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.

5.1 Academic Standing (*Ref: 236th Senate Meeting*)

Depending on the overall academic performance of a student till date, especially in the two preceding regular semesters (Autumn and Spring) in which the student had registered, the academic standing of the student is decided. 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: A student who has CPI at least 8, and no outstanding FR/DX/DR/W grade in a core course.

Category II: CPI less than 8, and no outstanding FR/DX/DR/W grade in a core course.

Category III (Ref: 241st Senate Meeting): A student who has at least one outstanding FR/DX/DR/W in core courses and **at most one** FR or DX grade in any other course in two preceding regular registered semesters, subject to having earned at least 18 credits in each of the semesters. These 18 credits may be earned in courses with any TAG.

Category IV (Ref: 241st Senate Meeting): A student who has at least one outstanding FR/DX/DR/W in core courses and **more than one** FR or DX grade in any other course in two preceding regular registered semesters, subject to having earned at least 18 credits in each of the semesters. These 18 credits may be earned in courses with any TAG.

Category V: A student who has not earned at least 18 credits (in courses with any TAG) in at least one of the previous two regular registered semesters.

Category VI (ARP): Students who have accumulated FRs/DXs worth 36 credits in core courses.

Note:

- a) Category VI supersedes all other categories.
- b) Students having at most 54 credits left to graduate may register for upto 54 credits on recommendation of the Faculty Adviser/ PIC(ARP) (*Ref: 236th Senate Meeting*)

In such cases where students have returned from semester exchange and the grades are not updated till the time of registration, the performance in the last two completed semesters at IIT Bombay may be considered for the purpose of CPI and Academic Category calculation. The same rule is also applicable in cases of semester drop. (*Ref:237th Senate Meeting*)

Interim Categories of the students are calculated using the information available 24 hours before registration for the new semester begins. These categories are used for the purpose of registration for the new semester. (*Ref:248th Senate Meeting*)

5.2 Permissible Registration Load (*Ref: 235th Senate meeting*)

Students are allowed to register as per their academic standing subject to a maximum credit limit as given below:

Academic Standing	Maximum Credits Allowed
Category I	54 credits
Category II, III, IV	48 credits
Category V	30 credits
Category VI (ARP)	24 credits

The Faculty Adviser is the competent authority to approve course registration in all cases.

Every student must register for a minimum of 18 credits each semester. In case a student 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.

The maximum credits allowed as given above cannot be exceeded under any circumstances. While these are the maximum allowed credits the Faculty Adviser may prescribe lower credits especially for Category III, IV, V and VI.

The Dual Degree project credits will not be counted in case of permissible load. (*Ref: 241st Senate Meeting*)

The current limits on credits (as per the academic category) for registration purposes are applicable only for students who have not yet completed the regular duration of programme for their degree, beyond which the above restriction is waived. (w.e.f. Spring Semester 2020-21)

5.3 Carrying backlogs forward

Attempts are made in the programme to give an early opportunity to register again for courses in which students may have received FR/ W/ DR/ DX grade.

- a) 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.
- b) 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.
- c) Students should give priority to clear core courses that are pre-requisites for other courses in subsequent semesters.

5.4 Audit Course

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

To complete a course in 'Audit' mode, the student has to fulfil the requirement as set by the course Instructor, such as submission of assignments and minimum performances in in-semester evaluations. A course, successfully completed in 'Audit' mode, cannot be considered towards the requirement of Minor or Honours.

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

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

For the entire duration of the programme, a UG student can audit maximum TWO courses.

UG students, who are only in Category I and II, will be permitted to 'Audit' a course during a regular semester.

5.5 Registration for Postgraduate level courses (*Ref: 235th Senate Meeting*)

Undergraduate students may be permitted to register for some postgraduate level courses from fifth semester onwards with permission of the instructor and approval of the Faculty Adviser without any restrictions.

5.6 Guided Study: (*Ref: 240th Senate Meeting*)

Guided Study is doing courses outside the curriculum in the self-study like mode, during a regular semester. A student belonging to 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 (refer Sec. 9) will not run concurrently, and the rules that govern permissible registration load apply strictly even for these courses. These courses can be considered towards Minor/ Honours, 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 situation, on a case-by-case basis:

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

5.7 Self-Study (*Ref: 236th Senate Meeting*)

Students can take upto two courses as self-study, after the expiry of the regular programme duration (4 years for B.Tech, B.Des, B.S. Programs, 5 years for Dual Degree) after taking necessary approval. This option is only available for completing the mandatory credits.

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

- a) 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.
- b) Academic standards be rigorously maintained in the self-study mode.

5.8 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.

- a) 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.
- b) An Institute elective course may be substituted by another Institute elective course from the same group.
- c) A departmental elective course may be substituted by another departmental elective course from the same group.

6 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.

6.1 Modes of Evaluation for Theory Courses

- a) 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 and semester-end examinations. Relative weightage for in-semester evaluations is typically between 50 and 60 per cent. This will consist of one mid-semester exam 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 or as declared by the course instructor at the beginning of the semester. The Instructor may also set aside up to a maximum of 20 per cent of the in-semester marks for attendance and/or class participation. (*Ref: 235th Senate Meeting*) Make-up for any absence from in-semester evaluations like midsem/tests/quizzes will be at the discretion of the Instructor.
- b) The semester end examination will be held as per the Academic Calendar and the weightage for this would be typically 40 to 50 per cent. It is typically of 3 hours duration and covers the full syllabus of the course. The semester- end examination is mandatory. The instructor awards an "II" grade for those students not appearing for the Semester end examination, if they have not been awarded a DX grade for insufficient attendance. Such students are eligible for a semester-end re-examination only on medical grounds/ valid reasons (refer Sec. 6.6) and on production of medical certificate or other supporting documents as the case requires. The application must be submitted to Instructor concerned before the start date of re-exam and online grading window announced in the Academic Calendar. Instructors are expected to conduct the re-exam and upload the grade as per academic calendar.

- c) If a student fails to appear for the re-examination too, the instructor will award "FR" grade again. If the absence in the re exam is due to medical / valid reasons, the student must submit supporting documents as mentioned above, within seven days of the scheduled date of the re-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.

6.2 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 semester-end test that contains an experiment or a written examination. In-semester work will typically carry 75% and the semester-end test 25% weightage respectively. It is obligatory to maintain a laboratory journal as prescribed by the course instructor. The final examination for laboratory courses will typically be held a week before the final theory examinations. In case of absence from semester-end examination, the same rules as those for theory courses is applicable.

6.3 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/ coordinator. The supervisor /co-supervisor, 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.

6.4 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 Honours requirement, whereas for Dual Degree, the project is a required component for the award of degree. As the case may be, the separate modes of assessment are mentioned hereunder.

6.4.1 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.

6.4.2 Dual Degree Projects

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

- I. For evaluation of DDP stage-I, the student has to submit a report to the respective department. Evaluation will be done, by a panel appointed by the DUGC/ coordinator, based on the report and (a) either an across the table discussion and viva-voce or (b) seminar presentation. The panel shall consist of the supervisor(s) and atleast one more faculty member, to act as examiners.
 - II. For evaluation of DDP stage-II, the student has to submit the 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 / presentation. 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.
- b)** The Board of Examiners for DDP assessment is approved by the Convener, DUGC, and will consist of the following: (*Ref.: 159th & 191st Senate Meeting*)
- 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 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.
- c)** **Submission of Electronic form of Dissertation/ Report** (*Ref: 204th Senate Meeting*) 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. (*Amended in the 207th Senate meeting*). The final transcripts/provisional degree certificate/final degree certificate will be issued only after receipt of dissertations/reports.
- d)** The minimum passing grade in each stage of the project assessment shall be “DD”.

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

6.4.3 B.S. Project (*Ref: 240th Senate Meeting*)

On completion of the project, student is required to submit a report and make a presentation to a committee appointed by the department which would award a letter grade.

6.4.4 Extension Rules for Projects (R&D, BTP, DDP, B.S. projects) (*Ref. 236th Senate Meeting*)

Grades for all registered project based courses have to be uploaded before the last date for grade submission. The evaluation committee may recommend an II grade for unfinished work due to any reason. Also, if a grade is not uploaded by the academic unit by the last date for grade submission, an II grade will be automatically assigned to the student.

In the case of R&D projects, BTP-1, BTP-2, DDP-1 and the first stage of the four year B.S. project and the 5 year integrated M.Sc project, a letter grade to replace the II grade must be submitted to the academic office, at most 20 days after the last date for grade submission of the previous semester. If a letter grade is not received by the academic office in time, the II grade will be automatically converted to an FR. No further extensions will be permitted on any grounds for these projects. The student may re-register for the project (mandatory for DDP-1) in a subsequent semester in case an FR grade is assigned.

For the final stage of the B.S./M.Sc project and DDP-2, a letter grade to replace the 'II' grade must be submitted to the academic office at most 20 days after the last date for the grade submission. However, the student may apply for an additional extension of at most 15 days (a final deadline of 35 days from the last date for grade submission of the previous semester), with recommendations and an explanation for the delay by the guide, to the DUGC of the concerned academic unit. Post assessment, the grade may then be sent to the academic office through the Convener, DUGC before this date. After this date (35 days from the last date for grade submission for project) the II grade will be automatically converted to an FR grade. The student will then have to re-register for the course in the subsequent semester after payment of fees. No further extensions will be permitted on any grounds for these projects.

The decision on allotment of hostel rooms during such extensions is done independently by the Dean (Student Affairs)/ Hostel Co-ordination Unit.

6.5 Grading

- a) 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
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	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/ equivalent course for mandatory courses (except core)}	
	FF	0 (Fail & Re-examination) {Credits are not included in CPI. Attendance below 80% - Repeat the course for core course(s)/equivalent course for mandatory courses (except core)}	
	DX		
	W	Course Withdrawn	
	AU	Satisfactory in an Audit course	
	PP	Passed	
	NP	Not Passed	
	II	Incomplete (place holder, gets converted to an appropriate grade after Semester end re-examination, as per applicability)	
	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". "FF", "II" and "DR" are place holders.

- b) 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.
- c) An "FR" grade is awarded in case/(s) where, in the opinion of the instructor (panel of examiners in the case of projects), the performance of the student is below an acceptable threshold in the in-semester and /or end-semester examinations. It may also be awarded for Academic malpractices. Details pertaining to Academic malpractices are available at: <http://www.iitb.ac.in/newacadhome/punishments201521July.pdf>
- d) (*Ref: 235th Senate Meeting*) 'DX' grade is awarded to students who have inadequate attendance as per following:

IIT Bombay expects one hundred percent (100 %) from its students in all classes. If the attendance of the student, as counted with effect from the first contact hour, falls below eighty percent of the total attendance expected, the instructor may award the student, '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 ground. Further, if a student has 80% attendance or more, he/ she cannot be awarded 'Drop due to inadequate attendance. Only exception to this rule is courses where the instructor has declared a prior in the first week that no DX grade will be awarded.

- e) 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.
- f) 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.
- g) **(Ref: 239th Senate Meeting- effective from End Semester Examinations of the Spring Semester 2019-20).**

"FF" grade can be awarded to UG students by the concerned course instructor. The students will be given only one chance for re-examination in case of FF grade, otherwise the grade will be converted to FR. Re-exam will be conducted for 50 % weightage (or same as the weightage of end-semester exam for the course). Re-exam for students with FF grade will be conducted along with medical re-exam.

The grade will be restricted to "DD" for the re-examination, in case of FF Grade.

h) Course(s) completed by student(s) outside IIT Bombay by means of NPTEL and / or SWAYAM and / or Semester Exchange, following due approval of DUGC/ DPGC, will contribute only towards completion of credits. Grade(s) earned in such courses will not be considered for the SPI/ CPI calculation. The transcript will record such course(s) and the corresponding grade(s) as it is/ they are. (Applicable for NPTEL/ SWAYAM courses from the academic year 2020-2021 onwards and for Semester exchange students for academic year 2021-22 onwards.) **(Ref: 246th Senate Meeting)**

6.6 Valid reasons for semester-end make-up examination **(Ref: 240th Senate Meeting)**

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

- a) Serious illness/ accident in the case of the student herself/ himself. Serious illness/ accident/ death of parent/ guardian.

6.7 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>

6.8 Semester Performance Index/ Cumulative Performance Index (SPI/CPI)

6.8.1 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:

$$C1g1 + C2 g2 + C3 g3 + C4 g4 + C5 g5$$

$$\text{SPI} = \frac{C1g1 + C2 g2 + C3 g3 + C4 g4 + C5 g5}{C1 + C2 + C3 + C4 + C5}$$

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:

$$C1g1 + C2 g2 + C3 g3 + C4 * \text{ZERO} + C5 g5$$

$$\text{SPI} = \frac{C1g1 + C2 g2 + C3 g3 + C4 * \text{ZERO} + C5 g5}{C1 + C2 + C3 + C4 + C5}$$

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.

The updated SPIs will be shown in the transcript only after the last date of grade submission (course + project) as per the Academic Calendar. Till then, only the SPI till previous completed semesters will be displayed.

6.8.2 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.

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:

$C_1g_1 + C_2g_2 + C_3g_3 + \dots + C_i^* \text{ZERO} + C_n g_n$

$\text{CPI} = \frac{\sum C_i g_i}{\sum C_i}$

$C_1 + C_2 + C_3 + \dots + C_i + \dots + C_n$

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:

$C_1g_1 + C_2g_2 + C_3g_3 + \dots + C_i^*g_i + \dots + C_n g_n$

$\text{CPI} = \frac{\sum C_i g_i}{\sum C_i}$

$C_1 + C_2 + C_3 + \dots + C_i + \dots + C_n$

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.

The updated CPI will be shown in the transcript only after the last date of grade submission (course + project) as per the Academic Calendar. Till then, only the CPI till previous completed semesters will be displayed.

The Transcript will reflect only two CPI i.e. a) CPI Courses and b) CPI – Courses +Project. (*Ref: 241st Senate Meeting*)

6.8.3 Semester Grade Report

The Senate of IIT Bombay in its 221st Meeting considered 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.

6.8.4 The Transcript: Consolidated Statement of Academic Performance

Transcript is a consolidated statement of 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 record the entire history of the academic performance of a student in all the courses he/she takes as a student in the Institute. Therefore every course registered by a student and the grades obtained there upon (including FR,DX,W etc.) will be mentioned in the transcript for the courses registered in the Autumn Semester 2016-17 onwards. (*Ref: 225th Senate Meeting*). The transcript will reflect only two CPI i.e. a) CPI Courses and b) CPI- Courses + Project. (*Ref: 241st Senate Meeting*) Additional courses will be shown separately, indicating also the minor / Honours, 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.

<p>6.9 Display of In-Semester Performance</p> <ul style="list-style-type: none"> a) The 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 6.5 (d) above will be clearly identified in this list. b) 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. <p>6. 10 Disclosing evaluated material in a course</p> <p>A course instructor will make arrangements for students to see all evaluated answer scripts, student submissions and other graded material before finalization of grades for theory as well as for lab courses as per dates published in Academic calendar.</p> <p>6.11 Answer Script Retention period</p> <p>Evaluated answer scripts are preserved by the Instructor/ Departmental Office for one semester.</p> <p>6.12 Compensatory time to PwD students (Ref: 239th Senate Meeting- effective from End Semester examination of the Autumn Semester 2019-20)</p> <p>Compensatory time is to be provided to all PwD students across the Institute during written examination.</p> <p>For PwD Students, 'compensatory time' will not be less than 20 minutes per hour of examination for persons who are allowed use of scribe/ reader/ lab assistant. All the candidates with benchmark disability not availing the facility of scribe may be allowed additional time of minimum of one hour for examination of 3 hours duration. In case the duration of the examination is less than an hour, then the duration of additional time will be allowed on pro rata basis. Additional time will not be less than 5 minutes and will be in the multiple of 5".</p> <p>PwD students must inform the instructors in advance regarding their need for compensatory time during examination.</p> <p>7. Registration of NPTEL/ SWAYAM Courses:</p> <ul style="list-style-type: none"> a) A student can take maximum of 12 credits of NPTEL/SWAYAM courses in lieu of departmental elective and Institute elective courses for the regular student (not under ARP), and, (b) a maximum of 24 credits of NPTEL/SWAYAM courses in lieu of any courses including core courses for the students, who are under ARP or in extension years after the approval from DUGC of the parent department towards the partial completion of mandatory academic curriculum. b) A student can take NPTEL/SWAYAM courses as 'Additional Learning' for UG students subject to not exceeding credit limit based on approval of DUGC. (Ref: 243rd Senate Meeting) <p>7.1 Credit Equivalence of NPTEL/SWAYAM courses with IIT Bombay courses (249th Senate Meeting):</p> <ul style="list-style-type: none"> a) 12 Weeks NPTEL/SWAYAM courses would be typically considered equivalent to 6 credits at IIT Bombay. However, in some special cases, DUGC/DPGC/UGC/PGC may consider and approve 12 weeks NPTEL/SWAYAM course(s) equivalent to 8 credits at IIT Bombay.

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

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

- a)** Registration for NPTEL/ SWAYAM courses: Students may register for these courses during registration window as per Academic calendar for that semester. Faculty Advisor can approve these registrations in consultation with DUGC.
- b)** Registration for Semester Exchange Courses: Academic Units may register students for these courses as and when student returns from the FRN Institute, as per approval of DUGC.
- c)** Grading- As per Academic calendar for that semester along with other courses.
- d)** If no grades are allotted during the approved window, the course will be removed automatically from the registration of the students on the last date of Academic Activity, so that there will be no issue in calculating SPI/CPI of the student.

8 CHANGE OF BRANCH

The Senate in its 256th meeting has approved the elimination of Branch Change into any of the JOSAA administered branches of admission. This is applicable for the students admitted through JEE (Advanced) 2023 onwards.

However, in 257th meeting of the Senate, it was approved that branch change option be made available to the preparatory students of 2022 batch who upon passing preparatory course will join IIT Bombay in July/ August 2023 by considering the following:

- a)** Their branch change option will be exercised in 2024 after completion of the prescribed course credits in the first two semesters.
- b)** No FR/DX/DR/W grades at the end of the first two regular registered semesters.
- c)** NP grade in NOCS shall not be a bar for applying for a branch change.
- d)** NP grade in GC 101 shall not be a bar for applying for a branch change.
- e)** The closing CPI (branch change CPI) of each programme/ department of UG 2022 entrants- will be considered as cut-off CPI for preparatory students of 2022 batch for their respective pro-gram/department.
- f)** Their branch change CPI will be executed based on their overall CPI.
- g)** These students can apply for the programmes/ departments for a branch change which are available for UG 2023 batch admitted through JEE (Adv.).
- h)** Supernumerary seats will be created in these programme/ department if needed.

Important: The above branch change provision is only available for the preparatory students of 2022 batch who have been entered in IIT Bombay in 2023 after successfully completing preparatory course.

9 PERFORMANCE REQUIREMENTS

9.1 Award of Degree

On successful completion of the prescribed requirements for a programme {B.Tech.; B.S.; Dual Degree (B.Tech. and M.Tech.)}, 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 Honours in her/his discipline or a Minor in another discipline within the stipulated time, this will be mentioned in the degree certificate: for example:

- a)** B.Tech. in Metallurgical Engineering and Materials Science with Minor in Environmental Sciences and Engineering.
- b)** B.Tech. in Mechanical Engineering with Honours.
- c)** B.Tech. in Mechanical Engineering with Honours and Minor in Electrical Engineering.
- d)** B.Tech. in Aerospace Engineering.

For Dual Degree students

- a)** B.Tech. in Chemical Engineering and M.Tech. in Chemical Engineering with Specialization (if any).
- b)** 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/ Honours or not, will be separately mentioned in the transcript. If an Honours/ minor is earned that will also be mentioned. An overall CPI for all the academic work done by the student will be given. The transcript and the final degree certificate will not mention any class whatsoever; only the CPI/s will be given in the transcript. Honours is not indicative of class.

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 such as practical training, NSS/NSO/NCC, work visits, seminar and projects, as specified for the discipline/programme.
- c)** The student should have paid all the Institute dues.
- d)** The student should have no case of indiscipline pending against him/her.

9.2 Award of Medals

The rules and procedures for the Institute Medals including Department silver medals, PGM (President of India Medal) and Dr. Shankar Dayal Sharma Gold Medal. (*Ref: 229th Senate Meeting*) - to be implemented for award of Medal from 55th Convocation.

- a) Eligibility for award of PGM, IGM and ISM (for UG), shall be highest CPI based on the mandatory courses for B.Tech./B.S. with Honours.
- b) For DD (B.Tech.+M.Tech.), the students of a particular Department shall be competing with the students of 4 year B.Tech. of their Department admitted together. And therefore, their CPI at the end of 4th year shall be taken into consideration.
- c) Tie breaking rule shall be as follows:
 - I. In case of tie in CPI for the President of India Medal (PGM) & Institute Gold Medal (IGM), the CPI across all courses taken (including additional and minor courses) up to end of 4th year will be used to break the tie.
 - II. In case of tie in the CPI for award of Silver Medals equal number of medals will be given.

Guidelines for award of Institute Medals: (Ref: 234th Senate Meeting)

A student will be considered for the medals, if the student has obtained overall CPI 9.0 or above (including MTPs). The grade of "II" on medical ground and/or "W" in a course shall not be the bar.

Following shall be considered a disqualification for award of Medals:

- a) The award of "DX" or "FF" or "FR" grade(s) in a course (of any tag ie. Core, Elective, Additional Learning, etc.)
- b) Extension for final stage MTPs.
- c) Any punishment under DAC/ADAC during the programme. (The names of the proposed medalist be verified from the Dean (Student Affairs) office for any DAC punishment)
- d) A semester drop.

NPTEL/ SWAYAM and or Semester exchange course(s).

- a) The students taking up courses outside IIT Bombay by means of NPTEL/ SWAYAM and or Semester exchange shall be eligible for the award of Medals and Prizes. *(Ref: 246th Senate Meeting)*

9.3 Transfer to Academic Rehabilitation Programme (ARP): (Ref: 240th Senate Meeting)

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. The students with poor Academic performance are transferred to the Academic Rehabilitation programme (ARP) (Ref. Sec 10)

I.4 Exit Degree option for Undergraduates (Ref: 253rd Senate Meeting)

I) Eligibility Criteria:

1. The students admitted and registered in the regular undergraduate programme, viz. B.Tech., B.S., B.Des., B.Tech.+M.Tech. (DD) shall be eligible for an exit degree, if they fulfill the following criteria:

(A) Minimum 160 credits to be completed as detailed below:

(i) ES 200 and HS 200 (3+3 = 6 Credits); AND

(ii) Minimum Dept. credits = 60 for specialization. OR

(iii) Minimum Science and Engg. credits = 60 without specialization.

(B) Minimum duration of B.Sc. (Engineering) and related exit degrees will be 6 semesters

Students can apply for an exit degree after 4th semester.

(C) The specialization can only be in the dept. they are registered in at the time of application.

2. The exit degree option is also available to all students who were admitted to the UG Programmes, who have not completed their degree requirements within the stipulated time and have not been terminated.

II) Process to apply:

1. A student can apply for the Exit Degree through prescribed application form (Annexure I) and submit to the Faculty Advisor.
2. Faculty Advisor may recommend the application to the DUGC.
3. DUGC may recommend the application to the UGAPEC Convener.
4. UGAPEC Convener may approve the application.

III) Degree Nomenclature:

1. Exit from B.Tech./Dual Degree (B.Tech. + M.Tech.) is mapped to B.Sc.(Engg.)

A. Example: in case of B.Sc.(Engg.) without specialization

“Bachelor of Science (3-year) in Engineering”

B. Example: in case of B.Sc.(Engg.) with specialization in Electrical Engineering

“Bachelor of Science (3-year) in Electrical Engineering”

2. Exit from B.S. in Chemistry and B.S. in Mathematics is mapped to B.Sc. (3 years)

“Bachelor of Science (3-year) in Chemistry”

or

“Bachelor of Science (3-year) in Mathematics”

3. Exit from B.S. in Economics is mapped to B.A. (3 years)

“Bachelor of Arts (3-year) in Economics”

4. Exit from B.Des. is mapped to B.Des. (3 years)

“Bachelor of Design (3-year)”

IV) Important Notes:

1. The date and month of passing would be the approval of exit degree by the UGAPEC Convener.
2. The students having the exit degree as their last qualification, will not be eligible for applying for M.Tech./ M.Des. Programme in IITB.
3. In case of lapsed registration, students may apply to regularize their semester registrations through DUGC and complete pending credits required for the exit degree.
4. The students are required to pay the continuation fees for the dropped semester(s), if any and clear all pending fees/ dues/ DAC punishments (as applicable).

9.5 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 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:

- a) The academic requirements of the B. Tech. Degree must be completed.
- b) 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).
- c) The student shall be awarded only the B. Tech. Degree and not Honours or Minor(s).
- d) 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. The degree would not mention anything of the kind.

10 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., 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 transcript 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. URA 2 is not available for DD students. Students should have earned minimum of 12 credits in BTP, in order to apply for URA 02 (*Ref: 241st Senate Meeting*)

URA03: 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.

11. ACADEMIC REHABILITATION PROGRAMME (ARP)

The Academic Rehabilitation Program (ARP) deals with students with poor performance in academics. It acts as a buffer for such students and provides them with an opportunity to continue in the institute and successfully complete their respective degrees. A student is transferred to ARP on receiving FR/DX grades for at least 36 credits in core courses. A faculty member in each department, called the ARP Faculty Adviser, will assist students of that department to register for courses manually, for a maximum of 24 credits.

A student, who is able to reduce the total number of FR/DX credits to less than 36 as above is transferred back to being a regular student. On failure to exit the ARP after three consecutive semesters in the program, termination of registration from the program may be recommended.

12. ALLOWING B.TECH. & B.S. STUDENTS TO LEAVE AFTER COMPLETING THEIR CREDIT REQUIREMENTS FOR B. TECH. & B.S. PROGRAMME EARLIER THAN 4 YEARS

The Senate in its 224th and 229th meeting approved the proposal of allowing B.Tech. & B.S. students to leave after completing their credit requirements for B.Tech. & B.S. Programme earlier than 4 years on the following terms and conditions :

- a) B.Tech./B.S. students can apply for leaving the Institute at the end of an academic semester provided their credit requirements are met and they have spent atleast three years in the institute.
- b) The Convener, UGAPEC may approve the Credit Completion certificate, which can be given to the students, after clearance of all dues.
- c) These students will be awarded their degree in the ensuing Annual Convocation as scheduled in Academic calendar.
- d) The passing date would be the date UGAPEC approves the results, which will be the date to be mentioned on Transcripts.
- e) The duration of programme would be still mentioned as 4 year B.Tech/ B.S. programme.
- f) 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.

13. CONVERSION FROM B.TECH. TO DUAL DEGREE (B.TECH.+M.TECH.) PROGRAMME (Ref: 240th Senate Meeting)

B.Tech. students can apply to convert to the Dual Degree Programme in the same department. Note that rules for such conversion are decided by the DUGC of the parent department and typically include:

- a) A Timeline for application;
- b) Academic Performance (including a CPI cut-off);
- c) Plan to complete the additional courses (total 8) for DD;
- d) Recommendations from the faculty advisor/ guide

Note that students must find out the exact guidelines from their respective departments.

14. GUIDELINES FOR INTERDISCIPLINARY DUAL DEGREE PROGRAMME (IDDDP) (Ref: 240th Senate Meeting)

A. Minimum Eligibility Criteria:

- a) Undergraduate (UG) students admitted to B.S., B.Tech. and DD (B.Tech.+M.Tech.) programmes can apply for IDDDP at the end of sixth semester.
- b) At the end of sixth semester, students must have CPI ≥ 7.5 and should not have any FR/DR/DX/W grade in mandatory courses including NSO/NSS/NCC.
- c) Through IDDD programme, students can apply for all the specializations of Dual Degree (DD) and M.Tech. programmes approved by the Academic Senate of IIT Bombay.

- d) Besides above eligibility criteria [a-c], a DUGC/ DPGC may enforce different eligibility and selection criteria [through Academic Senate of IIT Bombay].
- e) Students admitted to B.S. programme through Maths Olympiad are not eligible.

B. Procedure:

- a) Interested and eligible UG students from B.S., B.Tech. and DD (B.Tech.+M.Tech.) programmes should apply through online portal at the end of 6th semester.
- b) The application must clearly state the course plans to finish the B.S. / B.Tech. programme by the 8th semester and the intended IDDD specialization by the 10th semester.
- c) The completed application of the student must be examined and approved first by the DUGC of the parent academic unit, followed by the DUGC / DPGC/ PGC [as applicable] by the destination academic unit.
- d) The list of the short-listed candidates will be forwarded to Convener, UGAPEC by the Convener, DUGC / DPGC/ PGC of the admitting [destination] academic units. An academic unit can also provide a waiting list based on the merit.
- e) The final list of selected candidates will be conveyed to the Convener, DUGC of the respective parent academic units and the Convener, DUGC / DPGC/ PGC of the destination academic units. The final list will also be conveyed to Associate/ Dean, Student Affairs for adjustment in hostel accommodation.

C. Rules & Regulations:

- a) IDDDP is only for the movement of students from one academic unit to another.
- b) A DD specialization / M.Tech. program usually requires the completion of 8 to 9 courses of 6 credits and a DD/M.Tech. project (DDP/MTP) of 74 - 92 credits.
- c) IDDDP should be treated as (b). Accordingly, in addition to B.Tech./ B.S. of the parent academic unit, IDDDP students should complete the following (2021 batch onwards):
 - I. If host academic unit offering M.Tech. has a UG programme with honours, IDDDP students will be required to do 24 credits from the Honours basket and at least 24 credits from PG level/ advanced elective courses as prescribed by the host academic unit and a DD/ M.Tech. project (DDP/MTP) of 72 - 90 credits in order to earn M.Tech. degree of the admitting academic unit.
 - II. In cases where the host academic unit offering M.Tech. does not have a UG programme with honours, IDDDP students will be required to do at least 48 credits from PG level/ advanced elective courses as prescribed by the host academic unit and a DD/ M.Tech. project (DDP/MTP) of 72 - 90 credits in order to earn M.Tech. degree of the admitting academic unit.
 - III. For M.Sc./ MBA, requirements will be as approved by the Senate.
- d) An admitting academic unit can prescribe additional courses over and above that required for IDDDP, which may differ depending on the parent academic unit of the incoming student.
- e) In addition to the IDDDP requirements, if a student completes 24.0 credits towards the honors of the parent department, then he/ she will be considered for award of B. Tech./ B.S. with honors

of the parent department subject to the recommendation of DUGC of the parent department (2021 batch onwards).

f) An admitting academic unit:

- I. must prescribe required courses to the student at the time of admitting the student to IDDDP.
- II. will verify whether the M.Tech./ M.Sc./ MBA requirements have been met at the end of the IDDD programme.
- III. will have a limit of two students in each unit of specialization except in the case of KCDH and CMInDS (8 TA + 22 RAP for each).

g) The selection and entry of all candidates in IDDDP will remain provisional till the successful completion of B.S./ B.Tech. curriculum by the end of 8th semester. The payment of Tship to the selected candidates will remain subject to terms and conditions as applicable to usual DD programs and other rules as applicable from time to time.

h) The roll no. of the selected list of candidates will remain the same.

D. Additional criteria specified by various Academic Units for IDDDP

a) SJMSOM:

- I. For B.Tech./B.S. and Dual Degree students.
- II. Students with CPI of 7.0 at the end of their sixth semester and with no backlog in their UG courses can apply for the programme.
- III. The CPI criteria would be a benchmark and interviews will be conducted as per specialization applied for.
- IV. The fees applicable to IDDDP students will be the same as that applied for the students in 2nd year MBA programme.
- V. On completion of programme, the students would get B.Tech. Degree in parent department and MBA degree in given specialization.
- VI. The students would not be eligible for Minor in Management (SJMSOM)

b) Environmental Science and Engineering Department:

- I. A maximum of two students would be permitted to leave the Department for joining IDDD programmes.

c) Systems and Control Engineering:

- I. The candidate must satisfy the minimum eligibility criteria prescribed by the Senate.
- II. A SysCon core faculty member must agree to guide the candidate.
- III. In any year, a core faculty member can agree to guide (i.e. recommend) at most one candidate applying for the SysCon IDDDP.
- IV. The candidate must have completed any two courses from the list of SysCon minor courses within the first six semesters of the B.Tech. programme and have an average score of at least 7.5 in these two courses. This requirement can be waived if the student has credited some

equivalent courses in other departments which in their entirety cover the topics covered in any two SysCon minor courses. The average grade requirement for the equivalent courses is 7.5. The decision about granting the waiver will be taken by the IDPC.

- V. In case more than two candidates satisfying all the above requirements apply for the SysCon IDDDP, then the two candidates with the highest CPIs will be recommended for admission.

d) CMInDS:

I. Any IITB UG students with CPI > 8.0 can opt for the programme in their sixth and seventh semester with the approval of the DUGC of the B.Tech. department and DPGC of the M.Tech. department.

II. He/she must have completed at least two AI and Data Science minor courses (including the soft core or equivalent courses). A DDP guide who is a faculty member associated with the Centre for MI&DS must be identified, and give his/her approval as part of the application process. The final decision will be based on CPI, consent from an associated faculty who agrees to serve as advisor, statement-of-purpose, and/or interviews. The center will make the admission decisions before the start of placements in the seventh semester. A student who chooses to convert to IDDDP in AI and Data Science and thus receives a Masters in AI and Data Science, will not be eligible for a minor in AI and Data Science.

III. Number admitted: In its first year of operation, it is proposed to admit eight students in the institute TA category and 22 additional students in the RAP category. Students in the TA category will support the minor courses offered by the Centre. The students in the RAP category will be funded by projects of the faculty with whom the student engages in the year-long project.

IV. a. Curriculum Structure- the master's degree requires (Upto 2020 Batch):

i. Completion of at least two AI and Data Science minor courses (including the soft-core or equivalent courses) by 6th semester. For the first year of admission this requirement will be waived.

ii. Completion of 4 PG level courses. Two courses are to be completed in the 4th year, and the remaining two courses in the 5th year; these courses must be from a list of courses approved as electives for Minor/IDDDP in AI and ML by the CMInDS. The elective list includes a wide variety of relevant courses already offered by different departments. These are organized into three baskets: Mathematics, AI and ML, and Applications. The current list of such courses appears in the appendix.

iii. Completion of two stages of the Dual Degree Project as per the standard IDDDP structure.

iv. The CMInDS may prescribe additional pre-requisite courses over and above those discussed above if an incoming student is deemed to require them. These will be determined by the DPGC and informed to the student in advance.

b. Curriculum Structure- the master's degree requires (2021 Batch onwards):

i. Semesters 2 to 6: 12 credits {Minor-1 DS 203 (or equivalent), Minor-2 DS 303 (or equivalent)}

ii. Semesters 7 & 8: 12 credits {PG Elective-1, PG Elective -2}

iii. Semester 9: 48 credits {PG Elective-3, PG Elective-4, Dual Degree Project (Stage-1)}

iv. Semester 10: 48 credits {PG Elective-5, PG Elective-6, Dual Degree Project (Stage-2)}

Further, the students can take six PG courses (6xxx or 7xxx) from the prescribed baskets of breadth courses and the prescribed baskets of PG elective. The restriction is that at most two courses can be taken from any prescribed basket.

e) Centre for Digital Health:

- I.** Under-graduate students pursuing a B.Tech. / B.S. / DD degree in an academic unit at IIT Bombay with CPI > 7.5 at the end of sixth semester can apply. The applications would be screened first at the DUGC of the home academic unit of the applicants and subsequently, by a select academic committee of CDH.
- II.** The applicant is also required to identify through mutual discussion a faculty member associated with CDH as a supervisor for the dual degree project (DDP). Prior consent from the concerned faculty member is essential for the IDDD application.
- III.** The final decision will be based on CPI, consent from an associated faculty who agrees to serve as the DDP supervisor, statement-of-purpose, and/or interviews. The center will make the admission decisions before the start of placements in the seventh semester.
- IV.** A student, selected for IDDD in CDH for a masters in "Healthcare Informatics", will not be eligible for a minor degree in Healthcare Informatics.
- V.** Under-graduate students pursuing a B.Tech. / B.S. / DD degree at IIT Bombay can pursue additional one year of PG-level courses and a year-long project in the area of Healthcare Informatics to earn a masters' degree in "Healthcare Informatics" along with their B.Tech. / B.S. degree in dual degree mode.
- VI.** Number of students to be admitted: 8 students in the institute TA category and 22 students in the RAP category. The students in the RAP category will be funded by the research projects of the concerned faculty member with whom the student would engage in the year-long project.

f) Climate Studies:

- I.** The Minimum eligibility criteria, Application procedure, Rules & Regulations will remain the same as provided in the UG Rule Book. The department can have a maximum intake of 5 students in an academic year.

15. SPECIAL LEAVE

- a)** "Special Leave" includes students' participating in Academic activities/ extracurricular activities approved by the Institute. The Head of the academic unit shall be the approving authority, on the recommendation of the Faculty Adviser/ Faculty incharge of the respective activity, in which the student is participating.
- b)** Special Leave up to 5 working days (at a stretch or in part) may be sanctioned by the Head of Academic unit excluding mid/end semester examination in accordance with Academic Calendar. Compensation of any missed lab, quiz is at the discretion of respective course instructors.
- c)** Application shall be recommended by respective Faculty Adviser on merits and would also need approval from faculty incharge of the activity.

16. PLANNED BREAK FROM STUDIES (Ref: 250th Senate Meeting):

- a) The student is allowed for maximum two semester break during his/ her tenure in continuation. This planned break can be for variety of reasons. The student has to apply for one or two semesters break with a course completion plan in consultation with faculty advisor/ DUGC for consideration of Competent Authority.
- b) A declaration must be submitted by the student with regard to consent/ information of the parents as follows:
 - I. I have informed my parents and have their consent for semester(s),
 - II. I have informed my parents and do not have their consent for semester(s) break,
 - III. I have not informed my parents for semester(s) break
- c) The student should apply for semester break from his/ her fourth semester (second year) onwards. The break will be allowed/ approved after second year. Such approval can be availed by the student before fee payment and registration for a semester. Once the classes have started, the students will not be eligible to apply for a break for that semester.
- d) Approval chain of such semester break - Faculty Advisor – DUGC – – Dean (Academic Programme)/ Convener, UGAPEC.
- e) The student would not be eligible for hostel/ Medical facilities during approved planned break.
- f) In case of approved break, the period of break will not be counted for the prescribed duration of the programme. Hence, s/he will be eligible for the award of minor and Honours, if credits requirements are completed in the prescribed duration of the programme excluding approved break.
- g) A letter will be issued to parents in case of approved break, on the address available in the records of the students.
- h) The student is allowed to complete the remaining courses as per his/ her Academic category. The Academic category prior to approved break will be considered for registration after the student re-joins. The Faculty Advisor required to inform the student and parents that s/he not be able to graduate along with his/ her batchmates.

17. UTILITY

- a) Duration of Programme
 - I. Bachelor of Technology (B.Tech.) = Four Years
 - II. Bachelor of Science (B.S.) = Four Years
 - III. Dual Degree (B.Tech. + M.Tech.) = Five Years
- b) 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
- c) 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
- d) The medium of instructions at this Institute is English

18. GLOSSARY

Audit course	: Course taken by a student for exposure only and carries no grade points.
Course Credit	: 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 i.e. $C = 2xL + 2xT + P$
CPI	: Cumulative Performance Index which is obtained by dividing the Cumulative Grade Points by the Cumulative Credits.
Credits Earned	: Sum of credits earned by the student by passing courses registered during the semesters.
CRF	: Course Registration Form
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.
DUGC	: Departmental Under-Graduate Committee
FA	: Faculty Adviser
Grade point	: Number equivalent of the letter grades given by 10, 10, 9, 8, 7, 6, 5, 4, corresponding to AP, AA, AB, BB, BC, CC, CD, and DD respectively. FR carries zero grade points. PP, NP, W, DX and AU do not carry any grade points. II is a place holder and gets converted to an appropriate grade after semester end re-examination, as per applicability. DR is just a position holder.
Honours	: 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.
Instructor	: Member of faculty who teaches courses/labs.

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
Registration	: Semester wise enrollment for courses as per the prescribed curriculum.
Semester	: Two semesters in an academic year, approximately of 16 weeks duration each, the first one (Autumn Semester) from July to November and the second one (Spring Semester) from January to April/May.
Semester Credits	: Sum of credits of courses registered by the student in a semester.
Semester Grade Points	: The sum of the product of credits and Grade Points for each course registered by a student in a semester.
Senate	: The Senate is a statutory and supreme body that governs all academic matters of the Institute. The rulings of the Chairperson, Senate is final in regard to all academic matters.
SPI	: Semester Performance Index which is obtained by dividing the Semester Grade Points by the Semester Credits.
Summer Term	: Approximately of 8 weeks duration from May to July.
Transcript	: Consolidated statement of the Academic Performance of a student for all the semesters completed.
UGAPEC	: Under-Graduate Academic Performance Evaluation Committee
UGPC	: Under-Graduate Programmes Committee
URA	: Undergraduate Research Award.

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