

# Undergraduate (UG) Manual

Rules and Regulations for B.Tech. Program



**Indian Institute of Technology Goa**  
Academic Office

## Preamble

The Indian Institute of Technology Goa (IIT Goa) is envisaged as an institute for high quality research and teaching, especially in science and technology. The mission of IIT Goa is *"to impart knowledge and provide a unique learning experience to prepare students to be responsible leaders, managers, entrepreneurs, and professionals who will play a leading role in the sustainable development of Goa and the nation as a whole."*

IIT Goa offers the undergraduate degree program of Bachelor of Technology (B.Tech.) under various disciplines or academic programs. These academic programs are governed by rules and regulations approved by the senate of IIT Goa which is a statutory and supreme body of the Institute. The rulings of senate chairperson are final with regards to all academic issues. The senate continuously monitors the academic programs and makes appropriate modifications /improvements as and when required. The senate also sets a definite time schedule for various academic activities.

This manual is intended to set out the procedures and requirements of the undergraduate (UG) degree programs offered at IIT Goa. Such programs fall under the purview of the Senate Under-Graduate Committee (SUGC) who are responsible for drafting the manual. This institute level committee also decides the pace and the continuation of the student in the program on the basis of their overall performance.

IIT Goa is a very student-oriented place and it is the endeavor always to ensure that the students of this Institute get the best of everything that is needed to create outstanding scientists and engineers. Thank you for choosing IIT Goa. I wish all students a very bright future and successful career.

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# **1 Outline of the UG Program at IIT Goa**

Currently, the only UG degree program offered by IIT Goa is Bachelor of Technology (B.Tech.). The academic programs at IIT Goa started in 2016 are Mechanical Engineering, Electrical engineering, and Computer science while Mathematics and Computing was introduced in 2019. The objectives of the undergraduate program at IIT Goa are stated below.

1. To provide the highest level of education in technology and science, and to produce competent, creative, and imaginative professionals.
2. To promote a spirit of free and objective enquiry, and development of knowledge in different disciplines.
3. To produce highly skilled technologists with entrepreneurial skills having team spirit and leadership qualities.
4. To increase student participation in nation building through technology development that is sensitive to local needs.

The UG program at IIT Goa consists of courses in basic sciences, humanities and social sciences, engineering, technology, and other related topics. The sequence of studies broadly consists of four stages.

1. The first stage is an introduction to the sciences, humanities, and technical arts (such as workshops and engineering graphics). This is common and mandatory for all academic programs.
2. The second stage is the study of engineering courses that emphasizes on developing broad-based knowledge in core as well as interdisciplinary areas which enables the students to appreciate the links between science, engineering, and humanities.
3. In the third stage, the students are exposed to subjects in their chosen areas of study which develop in them the ability for physical/ analytical modeling, design and development.
4. During the final stage, an engineering student has the opportunity to study problems of integrated design with an awareness of size, performance, optimization and cost. Here they may work independently on a B.Tech. Project or engage in an industrial internship where they will receive valuable hands-on experience and enhanced potential job opportunities.

In parallel with the last two stages, the student is introduced to the social and economic objectives of the era and to the interaction between man, machine, and nature. This is sought to be achieved through elective courses in humanities and social sciences as well as through practical training, fieldwork, works-visits, and seminars.

## **2 The Academic Administration**

### **2.1 Academic Office (AO)**

The academic office (AO) is headed by the Dean of Academic Programs (Dean (AP)) or the Faculty-in-charge and it executes the decisions taken by the senate. In consultation with the standing committees formed by the senate, AO is responsible for the following tasks.

1. Coordination of admissions to various UG programs, processing and maintenance of all records related to admissions
2. Coordination of academic activities such as course registrations, preparation of academic calendar, scheduling of courses, examinations and maintenance of all records related to these activities as well the processing of cases of academic malpractices.
3. Implementation of academic progression and termination.
4. Implementation of leave rules.
5. Coordination of curriculum implementation, introduction of new courses, revisions to the existing courses, revisions to manuals duly approved by the senate.
6. Conduct of Convocation, award of prizes and issuing transcripts and degree certificates.
7. Dissemination of information pertaining to all academic matters to students and faculty.
8. Issuing necessary communications including circulars, orders.
9. Acting as a channel of communication between students, faculty members, schools, senate standing committees, and the senate.

### **2.2 Student Affairs Office (SAO)**

The student affairs office is headed by Dean of Student Affairs (Dean (SA)) the Faculty-in-Charge. It is primarily responsible for ensuring the well-being of students on campus through planning, coordinating and executing pertinent activities. In consultation with various faculty advisors and wardens, SAO undertakes following responsibilities:

1. Coordinating the extra and co-curricular activities for students in three broad domains: Technical, Cultural and Sports (in close consultation with respective Faculty Advisors).
2. Ensuring the maintenance of hostel premises including the quality of catering services in the hostel mess (with the help of mess and hostel council including student members).
3. Coordinating the allotment of hostel rooms for all the eligible student (through hall office in consultation with wardens).
4. Coordination of activities such as collection of fees and processing of scholarships.
5. Ensuring the observation of hostel rules and code of conduct by the residents and issuing necessary penalty in case of any deviation (through hall office in consultation with wardens).
6. Ensuring the mental well-being of students through preventive wellness activities as well as counselling (through Wellness and Counselling Cell).
7. Conducting the yearly elections for the Students' Council.
8. Coordinating the Alumni Cell activities (through members of the alumni cell).

## **2.3 Senate Undergraduate Committee (SUGC)**

This is a standing committee formed by the senate to oversee and monitor UG programs across the institute. It makes recommendations to the senate on all academic issues including policy matters as well as specific problems related to registered UG students and UG programs. Its constituents are representatives from various Academic Units (AUs), last SUGC chairperson (ex-officio), and four student representatives elected/nominated by the student council. The student members do not participate when the cases of academic evaluations of students are considered. Although the student members' opinion might be sought before making any decision, student members have no voting rights. The SUGC chairperson is elected by the constituent members.

SUGC is responsible for the following tasks in consultation of AUs and PUGCs.

1. Making recommendations to the AO in all matters pertaining to academics, including the introduction of new courses, credits allotted to the courses, approval for their contents, and evaluation policies.
2. Recommending modifications, as appropriate, for courses that are already approved by the senate.
3. Implementation of various aspects of the core curriculum and modifications if any.
4. Making recommendations in cases of academic warning, probation, termination, and appeal against termination.
5. Overseeing the processes of amending and updating the UG manual as and when required.

## **2.4 Program Undergraduate Committee (PUGC)**

Each program has a Program Undergraduate Committee (PUGC) to assist SUGC. Preferably, a PUGC member from respective AU is nominated as the member of SUGC. The Program Undergraduate Committee (PUGC) that consists of the Program Coordinator (PC), a convener nominated by the PC in consultation with the faculty of the program, one to three faculty members chosen by the program, and at least two nominated undergraduate students. The tenure of a faculty member in PUGC is two years, one third of them retiring each year and student member's tenure is one year. The PUGC has the following functions.

1. Advises the students about the curriculum of the program.
2. Advises them about academic opportunities.
3. Monitors the progress of academically weak students.
4. Handles any problem faced by students in their academic programs.
5. Assist SUGC on all academic matters whenever it is required.

## **2.5 The Faculty Advisor**

On joining the Institute, each student is assigned a Faculty Adviser (FA). The FA 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 FA is imperative. FA approves the registration of the students at the beginning of each semester and guides the students about the rules and regulations governing their courses of study. The FA should be available to discuss with the students their academic performance during the previous semester and help the student decide on the courses for which they can register.

### 3 Academic Sessions, Credit system, and Programs of Study

#### 3.1 Semesters

The academic session normally runs from the end of July in one year to the middle of July in the next year. It is typically divided into three parts described below.

1. Autumn Semester: From the fourth week of July to the last week of November.
2. Spring Semester: From the last week of December to the last week of April.
3. Summer Term (not a regular semester): From the middle of May to the middle of July.

Each of the two regular semesters consists of about seventeen to nineteen weeks. About seven to nine working days of each semester are used for the end-semester examination and one week during the semester is utilized for the mid-semester examination. The equivalent of fourteen weeks is devoted to teaching, which excludes all holidays and days spent on both the examinations, in each semester. The summer term consists of eight teaching weeks, not including holidays and examinations days.

#### 3.2 Academic Calendar

The dates of all academic activities including those of registration, late registration, last date of document submission, first and the last days of classes, dates to add or drop courses, course feedback collection, examinations, deadline for final grade submission, mid-semester recess, and vacation are published in the academic calendar every year by the academic office.

#### 3.3 Credit System

The students admitted to the UG program are expected to complete eight semesters of academic work. IIT Goa employs an academic credit system that is a standard used to quantify the efforts taken by the student towards their academic targets. Each course is assigned a certain number of credits based on the number of engagement hours of instruction. Their credits are calculated by means of the lecture hours per week (L), tutorial hours per week (T) and practical hours per week (P). Each program specifies the total number of credits required for graduation as described in a later section. The courses students can take are categorized as either standard courses or modular courses.

##### 3.3.1 Standard courses

These courses are either full semester or half-semester long. The calculation of credits for standard courses depends on whether the course involves lecture hours. For a full semester course, when the course involves lectures, the credit is computed as shown below.

$$Credits = L + T + \text{floor}\left(\frac{P}{2}\right)$$

If the course contains no lecture hours, the credits are calculated using the formula below.

$$Credits = L + T + \text{ceiling}\left(\frac{P}{2}\right)$$

The credit of a half-semester course is half of that of a full semester course with similar L-T-P parameters. The table below exemplifies the above procedure for various combinations of L-T-P hours.



Sr. No.	Engagement Hours Per Week			Credits	
	L (Lecture)	T (Tutorial)	P (Practical)	Half Semester	Full Semester
1	4	0	0	4	2
2	4	0	2	5	2.5
3	2	1	0	3	1.5
4	0	0	4	2	1
5	0	1	2	2	
6	3	0	3	4	
7	0	0	3	2	

Table 1: Illustration of course credits for different L-T-P parameters

### 3.3.2 Modular Courses

A modular course is one that has a shorter duration than a half semester courses and is flexible in its schedule compared to a standard course. Unlike a standard course, a modular course can start any time during the semester and its scheduling could be of a different form. For instance, a modular course could consist of engagement hours totaling to 14 hours in a span of 3 weeks or over several weekends. The credit of a modular course is computed based on the total number of equivalent lecture hours (H).

- A modular course 14 to 20 hours carries 1 credit.
- A modular course with 7 to 13 hours is worth 0.5 credits.

## 3.4 Programs of study

Admissions to UG programs will be based on the Joint Entrance Examination (Advanced) conducted by the Joint Seat Allocation Authority (JoSAA) set up by the Ministry of Education. Number of seats available for any program is decided by the senate based on the norms and regulations of Government of India (GoI).

### 3.4.1 Major program

Students are currently admitted to the following 4-year Bachelor of Technology (B.Tech.) UG programs at IIT Goa.

- Computer Science and Engineering (CSE)
- Electrical Engineering (EE)
- Mathematics and Computing (MnC)
- Mechanical Engineering (ME).

### 3.4.2 Minor program

The objective of minor is to give an opportunity to the students to go beyond their major to get an in-depth knowledge of an area outside of or complimentary to their major. The students who opt for Minors need to complete the requirements within the stipulated time of 4 years. The schools/AUs will publish eligibility criteria, selection process, the detailed structure, syllabus, and requirements for acquiring minors. To get a minor degree, students should satisfy all criteria specified by the academic unit offering the minors program. This will include taking the designated courses, maintaining certain SPI and so on. The modalities of withdrawal from a Minors program are also specified in the minor program policy. The general description of the program is as follows:

- **General Minor** This is offered by a specific academic unit and the objective is to equip a student who is majoring in an area with the fundamentals of another discipline. As an example, a computer science engineering student has the option to earn a minor in mechanical engineering.
- **Concentration minor** Currently no concentration minor is offered at IIT Goa.

For more information, please consult the Minor program policy.

### **3.5 Branch Change**

Branch change decisions will be taken at the end of two semesters based on second semester performance. Additional criteria and evaluations may be put in place through the branch change policy.

## 4 Curriculum

Every B.Tech. program has a prescribed course structure, termed as curriculum whose details are available on the Institute's website or through the PUGC of the program. The courses of study may be updated every semester and are available on the Institute's website. The requirements for degree program run by the Institute are broadly classified into institute requirements and program requirements. The later is further divided into compulsory or core courses, elective courses, and other requirements (projects, internship and seminars).

### 4.1 Institute Core Component

Courses that are part of institute core are common and compulsory to all UG students. These courses are offered in the first two semesters. The constitution of the institute core component is summarized in

Course Code	Course Title	L-T-P	Credits
MA101	Mathematics 1	3-1-0	4
PH101	Physics 1	2-1-2	3
CS101	Introduction to Computing	3-0-2	4
HS101	Foundation Program in HSS	3-0-0	3
CH101	Chemistry	3-1-0	4
CH102	Chemistry Lab	0-0-3	2
ME101	Introduction to Manufacturing	0-0-3	2
XX100	Introduction to Profession	1-0-0	0
Total			<b>22</b>

Table 2: The theory courses and laboratory courses for first year students in their *first semester*

Course Code	Course Title	L-T-P	Credits
MA102	Mathematics 1	3-1-0	4
PH102	Physics 1	2-1-0	3
PH103	Physics Lab	0-0-3	4
BIO101	Introduction to Biology	3-0-0	3
ME102	Introduction to Computer Aided Graphics	1-0-3	4
EE101	Introduction to Electrical Engineering	3-0-3	2
XX101	Program Core I	3-0-Z	3 + floor (z/2)
Total			<b>22 + floor (z/2)</b>

Table 3: The theory courses and laboratory courses for first year students in their *second semester*

Stream	Credits
Mathematics	4
Physics	3
Chemistry	4
Biology	3
Mechanical Engineering	4
Electrical Engineering	2
Computer Science and Engineering	2
Humanities and Social Sciences	3
Total	<b>40</b>

Table 4: Credits for institute core

## **4.2 Program Core Component**

The program core component constitutes at least 60 credits and these courses are mandatory. Semester wise courses offered as part of the program core component for the B.Tech. program are available on the website.

## **4.3 Humanities and Social Sciences Component**

The UG program will have at least 12 credits from courses offered by School of Humanities and Social Sciences (SHSS), of which 3 credits are obtained in the first semester as a compulsory institute core component as listed above. The remaining 9 credits can be obtained in a distributed manner from any open elective courses offered by the SHSS.

## **4.4 Elective Component**

### **4.4.1 Program Electives**

These are elective courses that students take from their parent discipline. Students typically have to take at least 12 credits as program electives.

### **4.4.2 Open Electives**

These are the elective courses that students may take from any AU/program in the Institute who have declared a course to be an open elective. They have to take at least 21 credits from open electives out of which 9 credits are included in the HSS component. The list of available open electives is provided by the academic office.

## **4.5 B.Tech. Project and Internship**

Students may have to earn additional credits from a combination of B.Tech. project and program electives or a six-month internship. The exact details may vary from program to program. The general description of each is given below.

### **4.5.1 B.Tech. Project (BTP)**

The BTP is a course wherein a final year student participates in research and development work under the guidance of a faculty member and thus be initiated into the methods of research, library reference work, use of engineering scientific equipment/instruments, learning of modern computational techniques, and writing of technical and scientific reports. BTP involves the application of knowledge earned while undergoing various courses and labs. During the project, the student may have to conduct a literature survey, carry out theoretical analysis, conduct an experimental investigation, design a prototype, analyze data, fabricate new equipment, or any combination of these elements.

The B.Tech. project is carried out in the final year and may be divided into two stages with the first stage carried out in the Autumn Semester and the second stage in the subsequent Spring semester. The credit details, BTP rules, prerequisites and other parameters of the BTP are defined by the program. However, typical BTP are structured with following pointers;

1. Students have to take a project under the guidance of a faculty member from the same program unless specifically permitted by the program. The allotment of project advisors should to be completed within two weeks from the date of commencement of semester.
2. The assessment of the project work typically consists of a presentation and/or a report for both mid-semester and end-semester evaluations. The AUs may specify additional requirements, rubrics, and procedures. The final project evaluation must be completed along with the theory courses.

3. The guide will ensure that the work carried out by the student is adequate, before giving approval for submission of the project report for evaluation.
4. The guide may award grade 'X' (see grading policy) (at least 1 month in advance of stage evaluation) in case the student has been irregular in interactions and work (a student is typically expected to have at least one meeting every week with the guide).
5. In special situations (such as prolonged health problems, delay in getting facilities), the guide may recommend to SUGC (through PUGC) an extension of a maximum of one month for submission and evaluation without any grade penalty.
6. The examination panel may award an incomplete grade (IN) (see grading policy) for poor performance and/or inadequate work. In the case of grade 'IN' (see grading policy), the student can appear again after 1 month by submitting a fresh report; in this case, the maximum possible grade will be restricted to C as in the case of courses.
7. The student will be required to register afresh for the stage in case of FX and F grades. In Case of F grade summer registration may be permitted by SUGC on a case-to-case basis and on justified recommendation of PUGC. However, registration during summer is not permissible in case of FX grade.
8. An 'I' grade may also be awarded if the student misses the evaluation on medical grounds, in which case, a re-examination must be held before the start of next semester. 'I' grade will be converted to 'F' grade if the students fail to complete the requirements within the stipulated time. The student needs to submit a medical certificate endorsed by the IIT Goa medical officer.
9. In case of delayed project submission other than those in (f) and (h) above, the maximum permissible grade is 'B'

#### **4.5.2 Six months' internship**

In order to enhance industry-academic partnerships and to improve placement opportunities, IIT Goa has introduced the possibility of six-month internships in the B.Tech. curriculum. Students during their 7th semester (tentatively middle of May to middle of November) are available to take of internships in an industry or in an academic institution. Those who are not interested in an external internship may work on an academic project at IIT Goa. In order to ensure the scientific quality of internships and to facilitate uniform grading, an internship advisory committee will be formed for each AU.

During the selection process itself, the companies are expected to provide details of the project as well as the duties of the student so that the committee can evaluate the quality of the proposed work. Based on the above criterion, the departmental committee can approve or reject internship positions. Students are allowed to take only those internships that are approved by the department. After selection, a guide from both IIT Goa and in the industry will be allotted. The faculty guide will interact with the industry counterparts for continuously monitoring the progress. At the end of the internship period, each student must submit a project report, and make a presentation to the department-specific evaluation committee. Grades will be given based on the quality report and presentation as well as on the feedback from the supervisor from the industry. The exact modalities of evaluation and grading will be decided by the program.

#### **4.6 National Sports Organization (non-credit course)**

Students must register for any one of the activities under National Sports Organization (NSO) during the first two semesters as a mandatory requirement. The choice will be based on the aptitude of the student for any of these activities and will be decided by a committee constituted for the purpose. Formal registration must be done for any one of these activities only at the beginning of the first two semesters along with other courses. Once registered for one of these activities, no change will be permitted at a later stage. This requirement must be completed before the end of

the second year. In case valid reasons exist, a student may be given special permission for completion of this requirement before the end of the third year failing which they will not be permitted to register for the courses of the fourth year. A student will be awarded PP (Pass) grade for this activity in each semester provided the minimum requirement of this activity is met during that semester together with 80% minimum attendance failing which the grade NP (Not Pass) will be given. The award of the degree is subject to the successful completion of NSO. In addition to the above mandatory requirements, the students are also permitted to take NSO in subsequent years. This facility is specially meant for students having interest in NSO activities.

## **5 Registration**

Each admitted student is required to register before commencement of a semester in order to enroll for that particular semester. The registration process consists of administrative registration and academic registration.

### **5.1 Administrative Registration**

Administrative registration deals with matters related to fee payment. Students must comply to the following to complete the administrative registration.

1. Payment of all fees as applicable and clearance of all outstanding dues if any.
2. Issue or renewal of identity cards if required as per the institute rules.
3. Any other process stipulated by the institute.

### **5.2 Academic Registration**

Academic registration involves the selection of courses consistent with the specified credit requirements and is subject to the rules described below. Registration is done at the beginning of each semester on the prescribed dates announced in the academic calendar and it is mandatory for every student until they complete their academic program. The student may be considered de-registered from the program if they fail to register during the specified window.

On joining the Institute, each student is assigned to a Faculty Adviser and the student can register for courses only with the approval from their Faculty Advisers. Students should contact their respective Faculty Advisers for consultation on selection of courses and registration.

IIT Goa has an online registration system accessible through the institute website. The registration instructions are shared with registration email and institute intranet.

#### **5.2.1 Registration for the First Two Semesters**

In each of the first two semesters of the program, a student is required to register for all the courses listed in the curriculum for the semester. In addition, students who are identified as academically weak at the end of the first semester may be prescribed a specially worked out load in consultation with the Faculty Advisor.

#### **5.2.2 Registration for Third and Subsequent semesters**

From third semester onwards, a student is required to register for the number of credits as prescribed by the curriculum of their program taking into account the provisions in the academic progression policy. The faculty advisor may recommend a reduced load for students with backlogs after considering the regulations as decided by the SUGC in the academic progression policy.

#### **5.2.3 Registration for Summer Term**

Only in case the number of students with backlog in a course is greater than or equal to five, the concerned program may offer this course during summer vacation subject to availability/ willingness of the faculty member. Summer courses with less number of students are discouraged. Such a proposal should come from the PUGC and be approved by the Dean (AP). Students can register for a maximum of 4 Courses during summer program on payment of the prescribed registration fees. The course instructor will monitor the attendance of the students registered and he/she may award "FX" grade as per rule for poor attendance. The summer course facility provides the opportunity to the students to clear their backlogs, by re-doing courses with adequate rigor, provided it is offered. Students are also not permitted to re-register for courses, which they have already

obtained a passing grade. The registration, examination etc. will be as per academic calendar and the evaluation/ grading will be done in the similar way as is done for normal semester courses.

### **5.3 Rules Regarding Academic Registration**

#### **5.3.1 General Rule**

1. A registration is considered valid only if there is no timetable conflict between the courses for which the student has registered.
2. The registration of a student in a course may be cancelled at any stage by the Academic office, if it is found that they do not meet the prerequisites for the course, or if there is a clash in the student's time table preventing her/him from attending the course or if it is found that s/he is not eligible to register for that course for any other reason.
3. Registrations must be completed on or before the prescribed last date for registration. Late registration may be permitted only for valid reasons and on payment of a late registration fee as prescribed from time to time.
4. If a student does not register for a regular semester (Autumn or Spring) without prior permission from SUGC or fails to register during any semester within the prescribed timeline, the student will be deregistered from the program and considered terminated.

#### **5.3.2 Adding and Dropping of Courses**

From third semester onwards, the students may choose to drop one or two courses out of the registered one(s), provided the minimum credit requirement is fulfilled. The students, however, will not be permitted to drop backlog course/s for which they have registered. Course/s dropped by a student may be taken during the summer term (if offered) or during a subsequent semester. In all the cases, course adjustments/dropping of courses must be done before the last date for Course add and drop, as announced by the Institute in its Academic Calendar. In exceptional cases, SUGC may allow adding/dropping of courses beyond deadline upon recommendation by the faculty adviser and the PUGC. This is typically reserved for medical emergencies. Adding of courses is not permitted in the summer term. However, students may drop a course up to two weeks prior to the last day of classes for summer course.

#### **5.3.3 Repeating a Course**

A student is required to repeat a course completely under the following situations:

1. When s/he gets a failing grade in a course.
2. When a student, who gets an 'IN' grade and fails to apply or does not appear for a re-examination (giving valid/ medical reasons for absence at the end-semester examination, the grade F is awarded automatically to such course).

#### **5.3.4 Course Substitution**

The substitution of one course where the student has failed by another course in a later semester is governed by following rules.

1. For an institute core or program core course (compulsory courses), no substitution is allowed and the same course must be repeated.
2. For an open elective course, substitution by another open elective is the only possibility.
3. Program electives may be substituted by another program elective course.



4. Substitution of courses with previously overloaded courses is governed by the academic progression rules.

SUGC is the approving authority for the course substitution.

## **5.4 Special Features in Registration**

### **5.4.1 Audit Course**

Auditing of courses by the Undergraduate students during regular semesters and summer term is permitted under the following conditions:

1. Students with CPI 7.5 and above will be permitted to 'Audit' the course. However, this would be restricted to maximum of 2 courses, irrespective of passed or failed during the entire period of the program.
2. The audited course will not carry any credits. The course done by auditing will not be considered for the purposes of calculation of SPI/CPI but will be reflected in the Semester Grade Report as Audit Course.
3. Prior permission of the Instructor is required.
4. The 'L' grade would be awarded by the instructor if the attendance is satisfactory (minimum 80%) and requirements set out by the instructor are met. Students will be expected to complete the in-semester assessments. If the attendance and performance is not satisfactory grade 'FL' would be awarded and the course will not appear at all in the grade card.
5. Students can audit a course provided the course is offered and the timetable slot permits.

### **5.4.2 Self-Study**

Self-study mode of crediting a course is intended to provide a student with a fail grade in the given course an opportunity to complete the course credit requirements by the end of fourth year of B.Tech. program. The self-study mode will allow students to avoid time-table clash while registering for backlog courses. Student may request for self-study courses by taking necessary approval from PUGC and SUGC. Following are the modalities of the self-study.

1. Self-study courses can be requested only during a regular semester and only for courses which are typically offered in that semester. These courses are subject to the availability/willingness of concerned faculty members.
2. A maximum of 3 courses can be taken as Self study mode only from semester 6 onwards.
3. An application for self-study has to be made to the PUGC, along with the permission from the instructor of the course well before the last date for adding/ dropping courses.
4. The SUGC will consider each application for self-study on its merits and will restrict the total number of such courses to only three during the entire program of a student. Students who have not attempted to clear the course in a regular manner may not be considered eligible for this mode of crediting.
5. The registration, examination etc. will be as per academic calendar. The course should be completed and the grade obtained in the same semester in which the registration is done without any carryover from one semester to another.
6. The evaluation for self-study will be done in the similar way as is done for normal semester course. Academic standards must be rigorously maintained in the self-study mode. The instructor must supervise the student from time to time apart from an examination at the end of the course.

7. The credits for a self-study course are the same as those for the regular course and will be taken into account while calculating the total credits in a semester which should not exceed the normal load.

#### **5.4.3 Guided Study**

The capable students will be provided option of Guided study to acquire proficiency in an area of their choice, through doing courses outside their curriculum by a self-study-like mode. This option is also subject to the availability and willingness of the instructor offering the course. Such an option will be available to students with a CPI of 8.5 or more to the extent of a maximum of one course per semester in the third and subsequent years, on the recommendation of the faculty adviser/project guide, and approval of PUGC. This option is called 'Guided Study' to distinguish it from the existing self-study mode, which is largely meant for students to clear backlogs in the curriculum. Further, even in respect of these courses, the rules that govern overloading apply strictly. The Guided study option may be used, on a case-by-case basis with prior approval of PUGC. The registration, examination etc. will be similar to a self-study course. The evaluation for guided study will be done in the similar way as is done for normal courses. This option will be made available in the following special situations also, provided CPI requirement is fulfilled:

1. Students who miss the 'Introduction to Profession Course' due to a change of branch obtained at the end of first year.
2. Students dropping an entire semester due to medical reasons.

## **6 Leave Rules and Attendance Requirements**

### **6.1 Class Attendance Rules**

The institute expects 100% attendance in every course the student has registered. If for some reason, a student is not able to attend a course, he/she is expected to inform the instructor of the course as well as the Dean of the Academic program in advance. The instructor may decide on an attendance rule and announce it at the beginning of the course. The following are some examples of attendance rules followed by the instructors.

1. If the student fails to meet a minimum attendance of 80%, he/she may be debarred from appearing in the end-semester examination and given grade X. Such a student will have to re-register for the same course if it is a core course (see grading policy).
2. The instructor may give a certain weightage in the student's performance evaluation of the course to attendance.

Additionally, attendance is mandatory for the first two weeks of each semester, during which the students are allowed to adjust their course registration. A student not satisfying this criterion may be deregistered from the course.

### **6.2 Vacations and Leave Rules**

Undergraduate students are entitled to avail the winter and summer vacations as specified in the academic calendar without seeking any permission. Additional leave rules are described below.

#### **6.2.1 Short Leave**

Leave of absence during the semester is discouraged for all registered students. However, for bona fide reasons, a student may apply for leave. The following points are considered for granting leave to the students.

1. A student may be granted leave for a medical emergency. A medical certificate from the institute Health Centre or a Government Hospital (endorsed by IIT Goa) is necessary for getting leave on health/medical grounds. The extent of this leave for medical reasons can be a maximum of ten working days per regular semester.
2. A maximum of five working days of leave may also be granted for any other valid reason (like attending sports/cultural/technical events) in a regular semester. Personal reasons are not considered a valid reason for applying for a leave.
3. In no case may a student be granted leave of absence in excess of fifteen working days in a regular semester.
4. The leave of absence in the summer term shall correspondingly be five working days (medical) and three working days (others), i.e., eight working days total.
5. Application for leave of absence should be submitted to the Academic Office through the Faculty Advisor well in advance.

#### **6.2.2 Temporary Withdrawal/Semester Leave**

A student may be allowed a leave of absence for a whole semester (temporary withdrawal) for bona fide reasons. Withdrawal on medical grounds/other exceptional reasons may be permitted by SUGC up to a maximum of two semesters during the students' entire program.

1. An application for temporary withdrawal should be made before the date of registration for the semester as mentioned in the Academic Calendar. However, under exceptional circumstances, a student may apply for withdrawal before the start of the end semester exam.
2. Application for temporary withdrawal should be addressed to the Dean, and routed through the Faculty Advisor. It should be submitted to the Academic office with supporting documents such as a Medical certificate (in original) in case of an illness.
3. A student who remains on authorized leave of absence due to ill health shall be required to submit a certificate from a Registered Medical Practitioner, ratified by the MO, IIT Goa to the effect that s/he is sufficiently cured and is fit to resume her/his studies. The registration of the student shall be provisional till the Medical Officer certifies the fitness. In the event that the MO recommends that the student is not yet fit to resume studies, the registration may be cancelled.

The students on semester leave or temporary withdrawal should pay the continuation fee as prescribed in the fee structure.

### **6.3 Penalty for Unsanctioned or Excessive Leave**

If a student is found to be absent from class without sanctioned leave, then the course instructor may recommend deregistration of the student from the course. The policy regarding unsanctioned leave leading to de-registration or any other consequence must be declared by the instructor at the beginning of the course. This rule applies to courses in regular semesters as well as in the summer term. If a student is found to be absent from a majority of lectures, tutorials and laboratory sessions for more than 20 working days (not necessarily contiguous) in a semester, with or without sanction, then her/his registration for all the courses in that semester may be cancelled by Senate on recommendation of SUGC resulting in a forced semester drop. If a student is found to be absent from all academic activities in a semester without authorization for more than 30 working days contiguously or s/he does not appear, without a compelling reason, for the end-semester examinations in all the courses in which s/he is registered, then her/his program will be terminated.

## 7 Performance Assessments

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 and End Semester Examinations. 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 PUGC and SUGC. This section can be a pointer for typical practices of weights of the evaluation components, rather than being a rule. Instructors will be free to choose weightages of exams, quizzes, assignments, class interactions, etc. and adapt a system where assessment is done in a 'continuous' manner rather than through one or two examinations.

### 7.1 Modes of Evaluation

#### 7.1.1 Theory Courses

1. Relative weightage for in semester evaluations including mid-semester examination is typically between 50 and 75 per cent. This will consist of one mid semester test of two hours' duration, of about 15 to 30 per cent weightage, to be held as per the schedule fixed in the Academic Calendar. The Instructor may also set aside up to a maximum of 10 per cent of the in semester marks for active participation in the class and the initiatives shown by the student. Makeup for any absence from in semester evaluations like mid sem/tests/quizzes will be at the discretion of the Instructor. Instructor needs to be convinced that the reasons for absence are genuine.
2. The end-semester examination is mandatory and will be held as per the Academic Calendar and the relative weightage for this would be 25 to 50 per cent. It is normally of 3 hours' duration and typically covers the full syllabus of the course. The end-semester examination is mandatory.
3. For the half semester courses, the final evaluation will be conducted along with the Mid Semester examinations of the full semester courses.
4. For modular courses, all the evaluation components should be completed within 1-2 weeks of the completion of the course. The evaluation policy must be stated clearly in the course proposal and approved by SUGC. The attendance alone cannot be considered for evaluation.

#### 7.1.2 Laboratory Courses

The assessment in a laboratory course will be based on periodic evaluation of the student's work prescribed through laboratory journals, their performance in viva voce examinations and group discussions, and an end-semester examination which may constitute a practical exam, a written exam, or a project. In-semester work typically carries 60-75% and the end-semester test 40-25% weightage respectively. It is obligatory to maintain a laboratory journal as prescribed by the course instructor. Final examination for laboratory courses will normally be held a week before the final theory examinations. In case the student remains absent from the laboratory end-semester examination, the same rules as those for theory courses are applicable.

#### 7.1.3 B.Tech. Project and Six-month Internship

The students not opting for the 6-month internship in the 7th semester may have to enroll for the B.Tech. project part I (BTP-I) which may be compulsory depending on the program requirements. B.Tech. project part II (BTP-II) is an elective and BTP-I may be the prerequisite for BTP-II. Program may prescribe a minimum performance in BTP-I (which may be higher than the pass grade 'D' (see grading policy)) for being eligible for BTP II. BTP I and BTP- II are separately graded, at the end of the respective semesters. BTP-I, BTP-II, and the six-month internship are supervised, and need

regular interaction (at least once a week) with the supervisor. Students may have to submit a project report and defend it in front of a panel of examiners consisting of the advisors and at least two additional faculty. The dates for submission of reports, the dates for presentations, and details of mode of assessment are decided by the individual programs. The grades must be sent to the Academic office before the last date for submission of grades. In case of irregularity of interactions, the supervisor may award grade “F” (see grading policy) before the last date for submission of the report. Grade “IN” (see grading policy) may be awarded if the student misses the presentation.

## **7.2 Grading and Performance Indices**

### **7.2.1 Grading Policy**

IIT Goa grading policy defines the standard letter grades throughout the institute for all courses. The assignment of a course grade is solely on the basis of the student performance in the course. Instructors are free to set the grading criteria in their courses and consider different components such as class quizzes, mid-semester/end-semester exams, assignments, projects, classroom attendance, etc., in the performance evaluation. A separate grading policy provides the details of various grades awarded at IIT Goa.

### **7.2.2 Semester Performance Index (SPI) and Cumulative Performance Index (CPI)**

The academic performance of a student in a semester is measured by Semester Performance Index (SPI). SPI is the weighted average of the final grade points obtained in all the courses taken by the student during the semester. SPI is calculated up to two decimal places by rounding up the third decimal. An example SPI calculation is as follows. Suppose in a given semester, a student has taken five courses having credits C1, C2, C3, C4, C5 and the student's final grade points in those courses are G1, G2, G3, G4, G5 respectively. Then, the student's SPI is

$$SPI = \frac{(C1G1) + (C2G2) + (C3G3) + (C4G4) + (C5G5)}{C1 + C2 + C3 + C4 + C5}$$

Cumulative Performance Index (CPI) denotes the up-to-date academic performance of a student. CPI is calculated as the weighted average of the final grade points obtained in all the courses taken by the student after the first semester. The grades obtained by the students in the very first semester do not contribute to the overall CPI. The CPI calculation is done using the same formula as the SPI calculation. Fail grades are included in the calculation of SPI and CPI. The failed courses, which the student passes later, will be considered to recalculate the CPI. The SPI will not be recalculated. SPI is not calculated for a dropped semester as the semester is treated as unregistered.

### **7.2.3 Disclosure of Performance Assessment**

In semester performance of all students is communicated by the instructor to the students before the end semester examination. Those awarded grade “X” (see grading policy) as described above will be clearly identified in this list.

1. A course instructor should allow students to see the evaluated answer scripts at their discretion, as long as this is done before the finalization of grades. The final total marks for an individual student should be shared with that student. The limit fixed for such a disclosure is before the date for grade submission. The time and venue will be decided and conveyed by the course Instructor.
2. Any change in grade requires approval of the Chairman Senate.
3. Once grades are published, changes if any will be allowed in case of totaling and tabulation errors only.

4. Evaluated answer scripts should be preserved by the Instructor/ Departmental Office for a minimum period of one semester.

### 7.3 Policy on Academic Progression

All undergraduate degree programs at IIT Goa have a program-specific curriculum that provides the course structure and the credit requirements for graduation. Each course in the curriculum concludes with a rigorous performance assessment and award of a letter grade/ grade point to the student. Subsequent calculation of SPI and CPI allows quantification of the student proficiency in the given course and program. The progression of the student in the degree program is linked with these quantifiable metrics to allow matching of their academic load with their needs and abilities. Based on the student performance, their academic standing and allowable academic loading for each semester is determined.

IIT Goa is an institute of national importance and the students at IIT Goa are expected to excel in their studies as captured by their evaluations. It is possible that some students may be unable to cope with their studies repeatedly despite their best effort. Early recognition of such cases will permit prompt corrective action such as putting the student on a slow track of learning. In extreme cases, where the student fails to improve repeatedly, early termination may also be recommended. The provisions of this policy may be adjusted through the faculty advisor with approval from PUGC, SUGC, and competent authority only in case of genuine medical reasons.

#### 7.3.1 Terminology

1. **Semester Academic Load** The academic load of each semester is quantified by the number of credits prescribed by respective curricula against that semester. This number varies from semester to semester and program to program.
2. **Available Course** A course is said to be available to a student when they are eligible to register for the course in the given semester.
3. **Backlog Course** A backlog course is a course that satisfies one of the following criteria
  - (a) A course which the student has to repeat (in case of core courses) or replace (in case of electives) due to an E/F/FX/FN grade in the previous attempt.
  - (b) A mandatory course the student could not register in the previous semesters because he/she had not yet cleared prerequisite course(s).
  - (c) A mandatory course the student was not able to register or complete due withdrawal from the semester with due approval from the competent authorities.
  - (d) A mandatory course the student had to forgo due to the mandatory reduction in academic load due to poor performance in the preceding semesters.
4. **Outstanding and Available Backlog Courses** Typically, each course is either available for registration in autumn or spring semester. Outstanding and available backlog courses are the courses in which a student has a backlog and are available for registration in the given semester.

#### 7.3.2 Academic Progression Modalities

1. All students have to mandatorily register for all the prescribed courses of each semester except if they are on probation/ the slow-track of learning.
2. Students with backlogs have to mandatorily register for the outstanding and available backlog courses when they are available. These students may further register courses from the current semester to bring the total registered credits for the semester up to their respective semester academic load.

- Students may overload additional courses as per the provisions specified in Table 4. No overload is allowed in the first and second semesters. The facility for overloading is provided for allowing students to clear backlogs, take additional electives, and minor program. It cannot be used for core courses prescribed in the curriculum. The overloading of any course, even if allowed by the policy, must also be possible without a timetable clash.

Criteria	Maximum Academic Overload
$CPI \geq 7$	Overload up to 8 credits
$5 \leq CPI \leq 7$	Overload up to 4 credits
$CPI < 5$	No overloading allowed

Table 5: Mapping CPI to maximum allowable academic load

- From 7<sup>th</sup> semester onwards, the students nearing completion of the degree may be allowed to overload courses above the credit limit imposed by Table 4 to complete their graduation requirement with a maximum credit limit of 24 with approval from PUGC and SUGC.

### 7.3.3 Academic Probation and Termination Modalities

The students of IIT Goa are always expected to maintain at least a minimum level of performance. Failing to which, they may be put on academic probation.

- Students who are not able to earn at least 50% of the semester credits during the 1<sup>st</sup> OR 2<sup>nd</sup> semester will be put on academic probation at the beginning of 3<sup>rd</sup> semester.
- 3<sup>rd</sup> semester onwards the academic performance of each UG student will be reviewed by the academic office at the end of each regular semester. The academic probation of these students will be according to the rules below.
  - Let  $P$  be the total number of credits the student required to be completed till the last regular semester starting from the first semester,  $Q$  be the total number of credits the student has earned in the preceding semesters,  $R$  be the total number of credits the student has registered in the last semester and  $S$  be the total number of credits the student has earned in the last semester.
  - A student will be placed on an Academic Probation/Warning in the next semester if either or both of the following conditions are satisfied.

$$\text{Condition - I : } Q \leq \frac{2}{3}P$$

$$\text{Condition - II : } S \leq \frac{1}{2}R$$

- Students on academic probation are mandatorily put on a slow track of learning. These students may register for up to 12 credits only with priority given to available backlog courses. The  $P$ ,  $Q$ ,  $R$  and  $S$  parameters for the students will be adjusted accordingly.
- To complete the registration process, a student on Academic Probation is required to sign an undertaking, with a countersign/ acknowledgment from the parents/guardians, incorporating the following conditions.
  - She/he shall register with higher priority for those courses (or their substitute) in which a failed grade is obtained.
  - She/he shall not hold any office in the Hall of Residence, Students Gymkhana or any other organization/body.
  - She/he may face early termination if the academic performance is not improved.



(d) Any other terms and conditions laid down by the SUGC/Senate.

5. Students who are found to be unable to cope with even the slow track of learning may become eligible for termination from the program. If a student already on Academic Probation/Warning satisfies either or both of the abovementioned conditions at the end of the current semester, then Academic Program of the student will be terminated.

Consult the Guidelines for multiple entry and exit for more information on the exit policies of the Institute.

### **7.3.4 Maximum Period for Completion of Program**

A student is required fulfil the requirements for their respective degree within the maximum period specified for the program, including withdrawal in exceptional circumstances, failing which their case will be referred to the Senate for dismissal. If a student fails to complete their academic program within 12 semesters (6 years), their academic program will be automatically terminated. However, if there are valid reasons, an appeal can be submitted to the Chair, Senate for reinstatement of their academic program. If the appeal is approved, the student will be required to pay appropriate fees as mentioned in the Institute's fee structure.

### **7.3.5 Appeal for Reinstatement**

A student whose program is terminated may appeal to the Chairman, Senate, for reinstatement in the program. In case of termination due to inadequate academic performance, the student should clearly explain reason(s) for poor performance, including how those reason(s) will not adversely affect her/his performance in future. The Senate shall take a final decision after considering all available inputs. A student may re-appeal even after a previous appeal has been rejected. However, the Senate may not entertain any re-appeal for review unless substantial additional information is brought to its notice.

## **7.4 No-Fail Policy for First Year B.Tech. Students**

One problem that faces every one of all the IITs is the unhealthy level of stress felt by many students, often leading to severe psychiatric disorders. As new students enter an IIT, the students perceive an intense competition, in an environment entirely new to his/her experience. Further, his/her performance in the very first semester, if poor, often leads the student to identify himself/herself as a deficient student, and this early identification of oneself may lead to a sense of 'giving up' for the rest of the students stay in the Institute.

In view of the above to relieve the stress of the students a No-Fail policy has been approved by the senate of IIT Goa. This No-Fail policy will not reduce any Academic credit requirement for obtaining the degree. It will only relieve the stress of the students. Following are the salient features of no-fail policy:

1. For the first semester will show grades only for the courses which have been cleared by the student.
2. A course in which the student has obtained a failure grade will be treated as a course which was not registered for;
3. The student has to pass in the failed course in the subsequent semesters for completing the requirements for obtaining the degree.
4. Grades obtained in the First Semester by the student will appear on his/her transcript, however, No SPI (Semester Performance Index) will be computed for the first semester and the overall performance, i.e., the cumulative performance index (CPI) will be computed on the basis of the rest of the seven semesters.

5. Rules for Branch Change with regard to the above mentioned policy are mentioned in the branch change policy.

## **7.5 Academic Malpractice**

The Institute has an approved policy regarding incidences of academic malpractice and follows it very strictly. Some of the acts can be impersonation, forging, copying in exams, assignments, lab projects etc., communicating with other students during exams, possession of chits, using electronic gadgets, plagiarism, and indiscipline by student during the exam. Disciplinary actions against academic malpractices include suspension for a semester/year, zero marking, grade degradation, no stipend/benefits, and so on. The instructors and exam invigilators are equipped with detailed instructions to be followed upon discovery of such acts. They are reported to the SSAC along with details like roll no, name, examination details, description of the act, material evidence, response of the student etc. Please check the policy document for detailed information.

## **8 Completion of Program and Graduation**

### **8.1 Award of Degree**

On successful completion of the prescribed requirements for a program, the 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. Although CPI will be given in the Semester grade reports and transcript the final degree certificate will not mention any class whatsoever. In those cases, where the student has earned the required credits for a Minor in another discipline, this will be mentioned in the degree certificate.

However, for conferment of degree, student has to fulfill the following requirements in addition to the conditions described in the subsections below.

1. The student should have taken and passed all the prescribed courses as per the institute and program requirements.
2. The student should have satisfactorily fulfilled other academic requirements such as NSO, seminar, and the B.Tech. project.
3. The student should have paid all the Institute dues
4. The student should have no case of indiscipline against him/her.

#### **8.1.1 Minimum Credit Requirement**

The minimum credits required for graduating with a B.Tech. degree are defined by each program independently. Typically, for the award of a U.G. degree the minimum credit requirement is between 132 and 144, while the maximum credit for any B.Tech. program may not exceed 160. The overall credit requirement is further divided into credit requirement for basic science courses, HSS courses, open electives, and program courses. The detailed curriculum showing the distribution of credits under each category as well as the sequence in which the courses must be taken will be specified by the program.

#### **8.1.2 Minimum CPI Requirement**

There shall be no minimum CPI requirement for the award of the B. Tech, but the eligibility for award of degrees to the students having CPI less than 5.00 would have to be approved by the Chairman, Senate and such cases will be reported to the Senate.

### **8.2 Issue of Transcript**

Transcript is the consolidated statement of the Academic Performance of a student for all the semesters since joining the program and is given to a student on successful completion of the program along with the degree certificate. The transcript will show all the courses a student has registered for in a given semester irrespective of the student passing or failing in the course. In case a student requires multiple attempts to pass a course, it will be shown in all semesters where the student registered for the course.

The transcript will show the SPI and overall CPI based on all the courses taken by the student. Additional courses will be shown separately, indicating also the minor, 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 program can obtain an Interim Transcript, if needed, on request and upon payment of applicable fee.

### **8.3 Award of Medals**

Various medals are awarded to the outstanding students from amongst the graduates who receive their degree at the annual convocation of the Institute. The President of India medal / The Institute Gold Medal is awarded to the most outstanding student in the Undergraduate program (B.Tech.) admitted through JEE as per the conditions and procedures as approved by the Senate from time to time. The Institute Silver Medal is awarded to the most outstanding graduate in each branch of Engineering. Only such students who have completed the program without, dropping or failing in any of the minimum credit carrying course are considered eligible for the award of medals.