

REGULATIONS

B. Tech.



**NATIONAL INSTITUTE OF TECHNOLOGY
TIRUCHIRAPPALLI - 620 015**

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CONTENTS

	PAGE
REGULATIONS	
B.1 QUALIFICATION FOR ADMISSION	1
B.2 PROGRAMMES OF STUDY	1
B.3 STRUCTURE OF THE PROGRAMME.	2-3
B.4 REGISTRATION AND ENROLMENT	4
B.5 FACULTY ADVISER	4
B.6 ASSESSMENT PROCEDURE - TESTS AND EXAMINATIONS	4-6
B.7 CLASS COMMITTEE	7-8
B.8 ELIGIBILITY FOR APPEARING IN SEMESTER EXAMINATION	9
B.9 WITHDRAWAL FROM EXAMINATION	10
B.10 TEMPORARY BREAK OF STUDY FROM THE PROGRAMME	10
B.11 PERFORMANCE ANALYSIS COMMITTEE	10
B.12 GRADING	11-12
B.13 MOVEMENT TO HIGHER SEMESTER	12
B.14 REVALUATION OF ANSWER PAPERS	12-13
B.15 COURSE REPETITION	13
B.16 SUMMER-TERM COURSE	13
B.17 GRADE CARDS	14
B.18 CLASSIFICATION	14
B.19 CONSOLIDATED STATEMENT OF GRADES	15
B.20 ELIGIBILITY FOR THE DEGREE	15
B.21 ATTENDANCE, DISCIPLINARY & GRIEVANCE COMMITTEE	16
B.22 REVISION OF REGULATIONS AND CURRICULUM	16
B.23 POWER TO MODIFY	16

B. Tech. Regulations

B.1 QUALIFICATION FOR ADMISSION

1. Candidates for admission to the first year of the B.Tech. degree programmes shall be required to have passed the Higher Secondary Examination (Academic stream) with Mathematics, Physics and Chemistry as three of the four subjects of study under Part III or any Examination recognized as equivalent.
2. The selection will be based on the ranking obtained by the candidate in the All India Engineering Entrance Examinations (AIEEE).
3. The Minimum marks required and the age limit as per the criteria prescribed by the admitting authority.
4. The duration of the programme for the Degree of Bachelor of Technology will be four academic years, with two semesters in each year. The duration of each semester will normally be 90 working days. However, a student may complete the programme at a slower pace by taking more time, but not more than eight years.

B.2 PROGRAMMES OF STUDY

The following are the programmes of study offered

1. Chemical Engineering
2. Civil Engineering
3. Computer Science and Engineering
4. Electrical and Electronics Engineering
5. Electronics and Communication Engineering
6. Instrumentation and Control Engineering
7. Mechanical Engineering
8. Metallurgical and Materials Engineering
9. Production Engineering

B.3 STRUCTURE OF THE PROGRAMME

Every programme will have a curriculum with a syllabi consisting of theory, practical, project work, etc., as given below :

- (i) General Core Courses
 - 1. Mathematics
 - 2. Basic Sciences
 - 3. Engineering Sciences
 - 4. Humanities
- (ii) Programme core courses
Engineering / Technology
- (iii) Elective courses of Engineering / Technology / Management
Entrepreneurship / Business Communication and allied fields.
- (iv) Practice courses
 - 1. Work shop Practice
 - 2. Computer Practice
 - 3. Engineering Graphics
 - 4. Laboratory Practices
- (v) Project work
 - (a) The curriculum in the first and second semester shall be common for all the B.Tech. programmes.
 - (b) Each course is normally assigned a certain number of credits as follows:
 - 1 credit per lecture period per week
 - 1 credit per tutorial period per week
 - 2 credits per 2 or 3 periods of laboratory practice per week
 - 3 credits for comprehensive viva-voce examination
 - 6 credits for project work
 - (c) The curriculum for any programme of study will be designed with total credits of 176.

(d) At least five Elective courses will be offered during VI-VIII semesters. For the entire programme, a candidate will be permitted to take a maximum of 4 electives from allied and other Department elective courses.

(e) **INDUSTRIAL TRAINING**

The student should undergo industrial training for a minimum period of two months during 1st, 2nd or 3rd year vacation periods and submit a report on the training, to the Head of the Department.

(f) **NCC/NSS/NSO TRAINING**

NCC/NSS/NSO training is compulsory for all the Undergraduate students:

1. The activities will include Practical / field activities / Extension lectures.
2. The activities shall be carried out outside class hours
3. The student participation shall be for a minimum period of 45 hours per semester during the first year.
4. The activities will be monitored by the respective faculty in charge and the First Semester Coordinator.
5. Grades will be awarded on the basis of participation, attendance, performance and behavior. Grades shall be entered in the mark statement as given below :

VERY GOOD

GOOD

SATISFACTORY

UNSATISFACTORY

If a candidate gets an unsatisfactory Grade, he/she has to repeat the above activity in the subsequent years, along with the first year students.

6. The Grades awarded by the Faculty in-charge shall be entered in the 2nd Semester Mark Statement.
7. A student who has not completed the NCC / NSO / NSS requirements in first four Semesters will not be permitted to continue the B.Tech. programme.

B.4 REGISTRATION AND ENROLMENT

- (a) Except for the first semester, registration for a semester will be done during a specified week before the end semester examination of the previous semester. Late registration / enrolment will be permitted with a fine of Rs.250/- up to two weeks from the last date specified for registration.
- (b) A student will be eligible for enrolment only if he / she has cleared all the dues to the Institute, Hostel, Library and the NCC Unit up to the end of the previous semester, provided he is not debarred for enrolment by a disciplinary action of the Institute.
- (c) The registration sheet contains the course number, course name, number of credits and category for each course taken in that semester. The student makes the choice of courses in consultation with his Faculty Adviser.
- (d) The curriculum for any semester, except for the final semester will normally carry credits between 21 and 25. If a student finds his / her load heavy in any semester, or for any other valid reason, he / she may drop courses within three weeks of the commencement of the semester but before commencement of first cycle test with the written approval of his / her Faculty Adviser & Head of the department.

B.5 FACULTY ADVISER

To help the students in planning their courses of study and to render general advice regarding either the academic programme or any other activity, the Head of the Department concerned, will assign every year, a certain number of students from the first semester to a faculty member who will be called Faculty Adviser. The set of students thus assigned will continue to be under the guidance of this Faculty Adviser till they complete the programme.

B.6 ASSESSMENT PROCEDURE - TESTS AND EXAMINATIONS

- (a) In each theory course and in the theory portion of each theory and practical combined course, the assessment pattern will be as follows:

Sl.No	Assessment	Duration	Marks
1.	1 st Cycle test	1 hour	20
2.	2 nd Cycle test	1 hour	20
3.	Assignments	-	10
4.	End semester Examination	3 hours	50

Assignments will be given one week before of each cycle test and the end-semester examination. The assignments will cover both the theory and the problems of the portion covered for the cycle test. The submitted assignment has to be corrected and returned to the student at least two days before the cycle test.

- (b) In each practical course and in the practical portion of each theory and practical combined course, the assessment pattern will be as follows :

Assessment	Marks
Continuous Assessment	75
End semester Examination	25

The assessment in laboratory course will be based on supervision of the student's work, their performance in viva-voce examinations and group discussions, the quality of their work as prescribed through laboratory manual and an end- semester test that contains an experiment and/or a written exam.

- (c) For the theory and practical combined courses the percentage weightage between theory and practice will be based on the relative credits allotted for the theory (Lecture + Tutorial) and practice of that course. Information regarding the relative credits will be provided in the syllabus book of the respective programmes.
- (d) For design and drawing subjects the duration of cycle test/ semester examination may be different from other theory subjects and it will be given in the respective curriculum. Normally both question paper setting and valuation of answer papers for all the examinations shall be carried out by the teacher who has handled the course. However, the Director will have the discretion

to appoint any other teacher or external examiner for setting question papers and valuing the answer scripts.

- (e) In the case of project work, a committee consisting of the Project Coordinator (appointed by the Head of the Department) and the project guide will carry out the continuous assessment based on at least two reviews. In case the Project Coordinator or the Head of the Department happens to guide students, the Head of the Department will nominate another faculty to carry out the continuous assessment for those students. After the project report is submitted by the student, an evaluation of the project and an oral examination will be conducted as the end semester examination by a panel consisting of the Project Coordinator, project guide and one faculty from the allied department or an external examiner from an educational institution/industry. The weight-age for continuous assessment and end semester examination shall be 40% and 60% respectively.

(f) **RETEST**

Students who are absent for cycle tests on genuine grounds (admission to hospital and reporting to the HOD concerned within two days of rejoining or representing the Institute with prior permission) can alone, take the Retest with the permission of the HOD concerned. Retest cannot be taken as an improvement test. Retest will be conducted after the 2nd cycle test.

The portions for the Retest shall be the combined portions of 1st and 2nd cycle tests and shall be conducted for 20 marks.

(g) **COMPREHENSIVE EXAMINATION**

The comprehensive viva voce course normally offered in 7th semester, shall have two written tests of 25 marks each. The final examination and viva-voce shall have 25 marks. The examination will be of objective type similar to the GATE examination. A department committee comprising the Head of the Department

or his/her nominee and two senior faculty of the department shall conduct the tests and examinations. The Viva-voce examination will be conducted by a panel of examiners consisting of the department committee and one external expert preferably from an Industry.

(h) SUPPLEMENTARY EXAMINATIONS

Students who have obtained "F" grade in a course will have only one chance to clear the course by re-examination. This re-examination will be of 100% weightage and will be held at the beginning of the subsequent semester. In such re-examination the maximum grade to be awarded shall be limited to "D" grade. If the student misses or obtains "F" grade in the reexamination, he/she will have to re-do the course when the course is offered in the subsequent semester/ summer course.

Students who have obtained "W" grade in a course will have only one chance to clear the course. This examination will be held for 50% weightage and other 50% will be taken from the internal marks obtained by the student. This examination will be conducted along with the re-examination conducted for those who obtained "F" grade. After the examination the student is entitled to an appropriate grade on the basis his/her internal and examination performance. If the student misses or secures "F" grade in the examination, he/she will have to re-do the course when the course is offered in the subsequent semester/ summer course.

B.7 CLASS COMMITTEE

(a) CONSTITUTION OF THE CLASS COMMITTEE

For all the branches of study during the first semester, a common class committee will be constituted by the Dean (Academic) and for other semesters. Separate class committees will be constituted by the respective Heads of Departments, as given below:

THE FIRST YEAR CLASS COMMITTEE

Chairman

A Professor, preferably not teaching the first year class.

Members

1. Course coordinators of each lecture based course.
2. One student member from each section to be nominated by the First Year Coordinator.
3. First Year Coordinator.

III TO VIII SEMESTER CLASS COMMITTEES

Chairman

One senior faculty of the department concerned preferably, not associated with the teaching of that class, to be nominated by the Head of the Department concerned.

Members

1. Faculty of all the courses of study
2. Four student members from the class concerned to be nominated by the Head of the Department concerned.

(b) FUNCTIONS OF THE CLASS COMMITTEE

The class committee shall meet thrice during the semester. The first meeting will be held within two weeks from the date of commencement of the semester in which the nature of the cycle tests as well as broad assessment procedure for the different tests and practical courses will be discussed. The second and third meetings will be held two weeks after the first and second cycle tests respectively to meaningfully interact and express opinions and suggestions to improve the effectiveness of teaching - learning process and analyze the performance of the students in the cycle tests. The chairman of the class committee should send the minutes of the class committee meetings to the Associate Dean (Academic-1) through the Head of the Department, immediately after the class committee meetings.

B.8 ELIGIBILITY FOR APPEARING IN SEMESTER EXAMINATION

100% attendance in the class is desirable for a candidate to be eligible to appear for the end semester examination in a course of any semester, provided there is no adverse report regarding his/her conduct by the Head of the Department. However, condonation for shortage of attendance upto 25% may be given on

- (i) Medical grounds with a condonation fee as fixed by the Institute from time to time. Such students must submit to the HOD / I year Coordinator a medical certificate from the appropriate authority, within a week after they return to the Institute. Certificates submitted after the above said period shall not be entertained on any account and
- (ii) Participation in the Institute approved extra curricular activities such as Sports, Games, Cultural meets, Seminar, Workshop, Conference and Interview arranged through Training & Placement Department, with prior permission .

The percentage of attendance is calculated up to 3 days before the last working day, and the percentage will be indicated by a code number / letter as follows:

Attendance Rounded to	Remarks	Code
90 - 100 %	Very Good	VG
80 - 89 %	Good	G
75 - 79 %	Marginal	M
< 75%	Poor	P

A student who has an attendance of less than 75% will not be permitted to appear for the end semester examination in the course in which the shortage exists. His/her registration for that course will be treated as cancelled and he/she shall be awarded 'U' grade (U stands for registration cancelled for want of attendance) in that subject. This grade shall appear in the grade card. The student should register for and repeat that course, as and when it is offered next time or the student has to undergo summer/term course for the subject.

B.9 WITHDRAWAL FROM EXAMINATION

A candidate may, for valid reasons and on the recommendation of the first year Coordinator / Head of the Department and with the approval of the Dean (Academic) be permitted to withdraw from appearing for the entire Semester Examination, as one unit. Withdrawal application shall be valid only if it is made earlier than the commencement of the last examination pertaining to the semester. Such withdrawal shall be permitted only once during the entire programme and shall not be construed as an appearance for the eligibility of a candidate for the award of classification (Rule B.18). If a candidate falls sick in the middle of the Semester Examinations, he/she can withdraw from one or more subjects on production of valid medical certificate.

B.10 TEMPORARY BREAK OF STUDY FROM THE PROGRAMME

A student may be permitted by the Dean (Academic) to withdraw from the programme for one year for reasons of ill-health or other valid reasons on the recommendation of Head of the Department. Such a candidate on rejoining will be governed by the rules under section B.13 (a) & B.13 (b).

B.11 PERFORMANCE ANALYSIS COMMITTEE

The Performance Analysis Committee will consist of the same members as the class committee but including the Head of the Department and excluding the student members. An external member from an allied department shall be nominated by the Chairman (Senate) to the performance analysis committee. The meeting of the Performance Analysis Committee, is to be held within seven days from the last day of the end semester examinations to analyze the performance of the students in all courses of study and finalize the grade ranges for each course and forward the statement of grades to the Dean (Academic) immediately, through the Head of the Department. The PAC, by collective wisdom, should ensure that the clustering / grading / pass-fail decisions have been reasonably balanced.

The attendance registers of all the courses along with all the cycle test marks, assignment marks, end-semester marks, grades and grade-ranges entered in the register are also to be sent to the Dean (Academic) immediately through the Head of the Department.

The Dean (Academic) (or duly authorized Associate Dean) shall go through the statement of grades (and the attendance register). In case of any problem that cannot be set right by the Dean (academic), the Chairman, Senate is authorized to take appropriate action in this regard. The finalized list shall then be conveyed to the Chairperson, PAC. It is proposed that the Chairperson, PAC will then arrange to display a copy of the statement of grades in the departmental notice board. It is expected that the results could be displayed within a day from the date of the finalization of the grades. Finalization of grades for supplementary examinations shall be made by the HOD and the teacher concerned. The results of which shall also be arranged to be displayed on the department notice board.

B.12 GRADING

- (a) All assessment of a course will be done on the basis of marks. The class teacher concerned can suggest suitable grades based on clusters of the marks. The Performance Analysis Committee, which shall meet within seven days after the completion of all examinations, shall analyze the relative cumulative performance of students in all examinations (continuous and end-semester) of a course and finalize the letter grade ranges for the course.
- (b) The letter grades and the corresponding grade points are as follows:

Letter	S	A	B	C	D	E	F	U	W
Grade (GP)	10	9	8	7	6	5	0	-	-

Students scoring less than the passing minimum (decided on relative basis) marks shall be deemed to have failed and be given 'F' grade. The letter grade 'U' indicates prevention from

appearing for Examination (due to shortage of attendance) and 'W' indicates the authorized withdrawal (Regulation B.9). A student having F grade need not redo the course, but can appear in the supplementary examination in the following semester. However, a student having U grade will necessarily redo the course, when it is offered again. The U grade once awarded stays in the record of the student and is deleted when he/she completes the subject later, indicating also the number of attempts made in that course. The CGPA will be accordingly revised deleting the 'U' in the earlier attempts in that course. The grade acquired by the student later will be indicated in the grade card of the appropriate semester.

- (c) A candidate who earns a minimum of 5 grade points in a course is declared to have successfully completed the course.

B.13 MOVEMENT TO HIGHER SEMESTER

- (a) A candidate proceeding to the III Semester should satisfy the following condition: To move to the third semester a candidate should have earned a minimum of 12 credits in the first semester. Otherwise, the candidate has to join only in the first year. However, after satisfying this stipulated condition such candidates will be permitted to rejoin the Institute at the beginning of the Third Semester in a latter year along with the regular students.
- (b) A candidate who is permitted to discontinue may rejoin the course at the appropriate semester only along with the regular students at the time of normal commencement of that semester.
- (c) A candidate who discontinues and rejoins shall be governed by the rules, regulations, courses of study and syllabus in force, at the time of his/her rejoining the course.

B.14 REVALUATION OF ANSWER PAPERS

In case of any student feeling aggrieved over the valuation, he can contact the teacher concerned within three weeks from the commencement of the semester immediately following the

announcement of the results. The student shall have access to his answer paper(s) in the end-semester examination which may be shown to him by the teacher(s) concerned. If the teacher feels that the case is genuine, the teacher may re-examine the case and forward a revised grade, if any, to the Dean (Academic) through the Head of the Department and the Chairman, performance analysis committee.

B.15 COURSE REPETITION

A student earned U grade in a core course has to repeat it compulsorily when the course is offered in a subsequent semester or undergo Summer/Winter. A student securing F or W grade in an elective course, may change the elective course or repeat it if he so desires to get a successful grade. A course successfully completed cannot be repeated.

B.16 SUMMER-TERM COURSE (for U,F,W Grader)

- (a) A summer term course may be offered by a department on the recommendation of the Head of the Department and the faculty offering the course and with the approval of the Dean (Academic). An elective course may also be offered in summer.
- (b) A summer term course is open only to those students who had taken the course earlier and had obtained an 'U,F,W' Grade.
- (c) *No student should register for more than two courses during a summer term.*
- (d) Summer term courses will be announced by the Dean (Academic) before the commencement of the end-semester examinations. A student will have to register within the time stipulated in the announcement by paying the prescribed fees.
- (e) The number of contact hours in any summer term course will be the same as in the regular semester course. The assessment procedure in a summer term course will also be similar to the procedure for a regular semester course.
- (f) *Withdrawal from a summer term course is not permitted.* No supplementary examination will be given for a summer term course.

B.17 GRADE CARDS

- (a) After the results are declared, Grade Cards will be issued to each candidate which will contain the list of courses for that semester and the grades obtained by the candidate.
- (b) The Grade Point Average (GPA) for each semester will be calculated only for those students who have passed all the subjects of that semester. Similarly Cumulative Grade Point Average (CGPA) upto any semester will be calculated only for those students who have passed all the subjects up to that semester. GPA is the ratio of the sum of the products of the number of credits of a course (C_i) and the grade points scored in that course (GP_i), taken for all the courses, to the sum of the number of credits of all the courses (n) in the semester.

$$GPA = \frac{\sum_1^n C_i * GP_i}{\sum_1^n C_i}$$

where n is the number of courses in that semester.

- (c) On successful completion of the programme, the CGPA will be calculated as follows:

$$CGPA = \frac{\sum_1^N C_i * GP_i}{\sum_1^N C_i}$$

Where C_i is the credit and GP_i is the grade point obtained by the candidate and N is the total number of courses for the entire programme.

B.18 CLASSIFICATION

After successful completion of the programme, degree will be awarded as per the following classifications based on the CGPA.

1. Candidates who successfully complete the programme within eight consecutive semesters getting a CGPA of 8.5 and above, passing all the courses in the first appearance will be declared to

have passed in first class with distinction. For this purpose, withdrawal from examination (vide regulation B.9) and authorized break of study (vide regulation B.10) will not be counted.

2. Candidates who get a CGPA of 6.5 and above, but below 8.5 and who complete the course within 9 semesters plus authorized break, (vide regulation B.10) will be declared to have passed in first class.
3. Candidates who get a CGPA of below 6.5 and who complete the course within the maximum prescribed period after joining the Institute will be declared to have passed in second class.

B.19 CONSOLIDATED STATEMENT OF GRADES

A student should have appeared for the semester examination in any particular subject (mere appearance for the continuous assessment tests is not sufficient) to be eligible for the award of the grade in the subject. At the end of the programme, all successful candidates (vide regulation B.20) will be furnished with a consolidated statement of grades which will contain the following particulars:

1. Grades in the subjects of all the semesters
2. CGPA
3. Classification (First class with Distinction / First class/Second class (vide regulation B.18)

B.20 ELIGIBILITY FOR THE DEGREE

A candidate shall be eligible for the award of the degree of the Bachelor of Technology (B.Tech.) only if the candidate:

1. has undergone the prescribed programme of study by earning the minimum total number of credits specified in the curriculum of the relevant programme of study within a maximum duration of 8 years.
2. has no dues to the Institution, Library, Hostels, etc.
3. has no disciplinary action pending against him/her.

B.21 ATTENDANCE, DISCIPLINARY & GRIEVANCE COMMITTEE

This Committee is constituted for the smooth functioning of the various autonomous Under-graduate Programmes of the Institute and it consists of the following members:

Dean (Academic)	Convener
Dean (Students)	Member
Associate Dean (Academic -1)	Member
Respective Head of the Department / First Year Coordinator	Member

This Committee will be looking into

1. the matters relating to condonation of attendance shortages of candidates.
2. all grievances and disciplinary problems of the students relating to malpractices in tests and end-semester examinations etc.

The Committee will meet as and when necessary and send the recommendations to the Senate for consideration / ratification / approval.

B.22 REVISION OF REGULATIONS AND CURRICULUM

The Senate may from time to time revise, amend or alter the regulations, courses of study and syllabus as and when found necessary. Any other relevant rules needing urgent revisions can be framed and implemented by the Director/Chairman of the Senate and ratified in the subsequent Senate meeting. In case of difference of opinion regarding the interpretation of any of the regulations, the decision of the chairman of the Senate shall be final.

B.23 POWER TO MODIFY

Notwithstanding all that has been stated above, the Senate has the right to modify any of the above rules and regulations from time to time.