JNTUH UNIVERSITY COLLEGE OF ENGINEERING, SCIENCE AND TECHNOLOGY, HYDERABAD
(AUTONOMOUS)
Kukatpally, Hyderabad – 500085

Academic Regulations (R22) for B.Tech (Regular) Programme

1.0 Under-Graduate Degree Programme in Engineering & Technology (UGP in E&T)
JNTUH University College of Engineering, Science and Technology Hyderabad (JNTUH UCESTH) offers a 4-year (8 semesters) **Bachelor of Technology** (B.Tech) programme, under Choice Based Credit System (CBCS) with effect from the academic year **2022-23.**

2.0 Eligibility for Admission

2.1 Admission to the undergraduate (UG) B.Tech programme shall be made either on the basis of the merit rank obtained by the qualified student in entrance test conducted by the Government of Telangana (EAMCET) or the University or on the basis of any other order of merit approved by the University, subject to reservations as prescribed by the government from time to time.

2.2 The medium of instructions for the entire undergraduate programme in Engineering & Technology will be **English** only.

3.0 The Structure of B.Tech Programme

3.1 A student after securing admission shall complete the B.Tech programme in a minimum period of **four** academic years (8 semesters), and a maximum period of **eight** academic years (16 semesters) starting from the date of commencement of first year first semester, failing which student shall be forfeited seat in B.Tech course. Each student shall secure 160 credits (with CGPA ≥ 5) required for the completion of the undergraduate programme and award of the B.Tech degree.

3.2 **UGC/ AICTE** specified definitions/descriptions are adopted appropriately for various terms.

3.2.1 Semester Scheme

Each undergraduate programme is of 4 academic years (8 semesters) with the academic year divided into two semesters of 22 weeks (≥ 90 instructional days) each and in each semester -'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)' under Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) indicated by UGC, and curriculum/course structure suggested by AICTE are followed.

3.2.2 Credit Courses

All subjects/ courses are to be registered by the student in a semester to earn credits which shall be assigned to each subject/ course in an L: T: P: C (lecture periods: tutorial periods: practical periods: credits) structure based on the following general pattern.

- One credit for **one** hour/week/semester for Theory/Lecture (L) courses and Tutorials (T).
- One credit for **two** hours/week/semester for Laboratory/Practical (P) courses.

Courses like Environmental Science, Constitution of India, Intellectual Property Rights, and Gender Sensitization Lab are mandatory courses. These courses will not carry any credits.

3.2.3 Subject Course Classification

All subjects/courses offered for the undergraduate programme in E&T (B.Tech programme) are broadly classified as shown in Table 1. The college follows the guidelines issued by AICTE/UGC.

Table 1. Category of Courses

S. No.	Broad Course Classification	Course Group/ Category	Course Description
1	Foundation Courses (FnC)	BS – Basic Sciences	Includes mathematics, physics and chemistry
2		ES - Engineering Sciences	Includes fundamental engineering subjects
3		HS – Humanities and Social Sciences	Includes subjects related to humanities, social sciences and management
4	Core Courses (CoC)	PC – Professional Core	Includes core subjects related to the parent discipline/department/branch of engineering.
5	Elective Courses (EℓC)	PE – Professional Electives	Includes elective subjects related to the parent discipline/department/branch of engineering.
6		OE – Open Electives	Elective subjects which include inter-disciplinary subjects or subjects in an area outside the parent discipline/department/branch of engineering.
7	Core Courses	Project Work	B.Tech. Project or UG Project or UG Major Project or Project Stage I & II

8		Industry Training/ Internship/ Industry Oriented Mini-project/ Mini-Project/ Skill Development Courses	Industry Training/ Internship/ Industry Oriented Mini-Project/ Mini-Project/ Skill Development Courses
9		Seminar	Seminar/Colloquium based on core contents related to parent discipline/department/branch of engineering.
10	Minor Courses	-	1 or 2 Credit Courses
11	Mandatory Courses (MC)	-	Mandatory Courses (non-credit)

4.0   Course Registration

4.1   A 'faculty advisor/mentor shall be assigned to a group of 20 students. A mentor will provide information about the course structure and curriculum to the mentees. A mentor will also assist the mentees in choosing the subjects/courses, based on their competence, performance, fulfillment of prerequisites and interest.

4.2   The academic section of the college invites 'registration forms' from students before the beginning of the semester through 'on-line registration', ensuring 'date and time stamping'. The online registration requests for any semester shall be completed before the commencement of SEEs (Semester End Examinations) of the preceding semester.

4.3   A student can apply for on-line registration only after obtaining the 'written approval' from faculty advisor/mentor which shall be submitted to the college academic section forwarded through the Head of the Department. A copy of it shall be retained with the Head of the Department, faculty advisor/ mentor and the student.

4.4   A student may be permitted to register for all the subjects/courses in a semester as specified in the course structure with maximum additional subject(s)/course(s) limited to 6 credits (any 2 elective subjects), based on performance i.e. Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA), and completion of the 'prerequisites' as indicated for various subjects/courses, in the department course structure and contents of syllabus.

4.5   Choice for 'additional subjects/courses', not more than any 2 elective subjects in any semester, must be clearly indicated, which needs the specific approval and signature of the faculty advisor/mentor and HoD.

4.6   If the student submits ambiguous choices or multiple options or erroneous entries during online registration for the subject(s)/course(s) under a given/specified course

group/category as listed in the course structure, only the first mentioned subject/ course in that category will be taken into consideration.

4.7   Subject/course options exercised through on-line registration are final and cannot be changed or inter-changed; furthermore, alternative choices will not be considered. However, if the subject/course that has already been listed for registration (by the Head of Department) in a semester could not be offered due to any unforeseen or unexpected reasons, then the student shall be allowed to exercise an alternative choice - either a new subject (added in the list by the Head of the Department) or an existing subject (subject to the availability of seats). Such alternative arrangements will be made by the Head of the Department with due notification and time-framed schedule within the first week from the commencement of class-work for that semester.

4.8   Dropping of subjects/courses may be permitted only after obtaining prior approval from the faculty advisor/mentor 'within a period of 15 days' from the beginning of the current semester.

4.9   **Open Electives:** Students are to register an Open Elective (OE-I) during III year II semester, an Open Elective (OE-II) during IV year I semester, and a PG Open Elective (PG OE–I) in V year I semester from the list of Open Electives given. However, a student cannot opt for an Open Elective offered by the parent department, if it is already listed under any category (Professional Core, Professional Elective, Mandatory Courses, etc) in any semester (including forthcoming semesters).

4.10.   **Professional Electives:** The students have to choose six Professional Electives from the list of Professional Electives given in the course structure.

4.11   A student shall register for a **Real-Time or Field-Based Research Project** in II year II semester.

4.12   Students shall register for **Industry Oriented Mini Project/Internship/Skill Development Course** immediately after the end examinations of II year II semester and pursue it during summer vacation and continue through III year I and II semesters with regular course work not being affected by the same.

4.13   Undergraduate Major Project (UG Major Project) work shall be carried out in two stages: **Project Stage I** and **Project Stage II**. A student shall register for the UG Major Project during the IV year I semester, as per the instructions of the project guide/supervisor assigned by the Head of the Department and shall continue through IV year I and II semesters.

5.0   Subjects/ courses to be offered

5.1   A subject/course may be offered to the students, only if a minimum of 15 students opt for it.

5.2   More than one faculty member may offer the same subject.

5.3   A lab/practical may be included with the corresponding theory subject in the same semester) in any semester.

5.4   If more students opt for a particular subject/course, then the priority shall be given to students firstly on 'first come first serve' basis (i.e., based on the time of online entry) and secondly based on CGPA (student who has higher CGPA is given more preference).

5.3   If more students opt for a particular subject/course then the concerned Head of the Department shall decide whether or not to offer such a subject/course for two or more sections.

5.4   In case of options coming from students of other departments/branches/disciplines (not considering open electives), priority shall be given to the student of the 'parent department'.

6.0   Attendance requirements:

6.1   A student is eligible to appear for the Semester End Examinations if the student acquires a minimum of 75% of attendance in aggregate of all the subjects/courses (including mandatory or non-credit courses) in that semester. Two periods of attendance for each theory subject shall be given, if the student appears in the mid-term examination.

6.2   Shortage of attendance up to 10% (65% and above, and below 75%) can be condoned in each semester by the College Academic Committee on genuine and valid grounds (considering the days of attendance in sports, games, NCC and NSS activities and days of absence due to medical reasons) based on the student's representation with supporting evidence.

6.3   A stipulated fee is levied on students whose shortage of attendance is condoned.

6.4   Shortage of attendance below 65% in aggregate shall in no case be condoned.

6.5   Students whose shortage of attendance is not condoned in a semester are not eligible to appear for Semester End Examinations of the semester; they shall be detained and their registration for that semester shall stand cancelled. They will not be promoted to the next semester. Furthermore, marks earned in CIE of the subjects in detained semester become void, and henceforth the subjects are not graded, and SGPA and CGPA are not calculated. They may seek re-registration for all the subjects registered in that semester in which the student got detained, by seeking readmission for the semester as and when offered; in case if there are any Professional Electives and/or Open Electives, the same may also be re-registered if offered, however, if those electives are not offered in later semesters, then alternative electives may be chosen from the same set of elective subjects offered under that category.

6.6.   However, a student fulfilling the attendance requirement in a semester is not eligible for readmission into the same.

6.7   When a student is detained due to shortage of attendance in any semester, he may be readmitted into that semester, as and when offered, with the academic regulations of the batch into which he gets readmitted to.

7.0   Academic Requirements

The following academic requirements have to be satisfied, in addition to the attendance requirements mentioned in Item No. **6.**

7.1   A student is deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course **(Theory/Practical)** if the student secures not less than 35% (14 marks out of 40 marks) in the Continuous Internal Evaluation (CIE), not less than 35% (21 marks out of 60 marks) in the Semester End Examinations (SEE), and a minimum of 40% (40 marks out of 100 marks) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of letter grades, this implies securing **'C'** grade or above in that subject/ course.

7.2   A student is deemed to have satisfied the academic requirements and earned the credits allotted to "**Real-Time/Field-Based Research Project" and "Industry Oriented Mini Project/Internship/Skill Development Course"** if the student secures not less than 40% marks (i.e. 40 marks out of 100 marks) in the evaluation of the same.

A student is deemed to have failed in Real-Time/Field-Based Research Project and Industry-Oriented Mini-Project/Internship/Skill Development Course, if he (i) does not submit a report on the same or (ii) does not make a presentation of the same before the evaluation committee as per schedule, or (iii) secures less than 40% marks in evaluation of the same.

A student who is failed in either Real-Time/Field-Based Research Project or Industry-Oriented Mini-Project may reappear once for the evaluation when they are scheduled again; if the student fails again in the evaluation of 'one such reappearance', the student has to reappear for the same in the subsequent semester, as and when it is offered.

7.3   A student shall pass in a **mandatory course** if he secures not less than 40 % of marks (40 marks out of 100 marks) in the CIE. A mandatory course is not graded and does not carry credits. Only Pass/Fail shall be indicated in Grade Card.

7.4   A student is deemed to have satisfied the academic requirements and earned the credits allotted to **Project Stage-I** if the student secures not less than 40% of marks (40 marks out of 100 marks) in the evaluation of the same.

A student is deemed to have failed if the student does not submit a report on work carried out during Project Stage-I or does not make a presentation of the same before the evaluation committee as per schedule or secures less than minimum marks in the evaluation.

A student who has failed may reappear once for evaluation when it is scheduled again; if the student fails in the evaluation of 'one such reappearance', the student has to reappear for the same in the subsequent semester, as and when it is offered.

7.5.   A student is deemed to have satisfied the academic requirements and earned the credits allotted to **Project Stage-II** if the student secures not less than 35% (14 marks out of 40 marks) in the Continuous Internal Evaluation (CIE), not less than 35% (21 marks out of 60 marks) in the Semester End Examinations (SEE), and a minimum of 40% (40 marks out of 100 marks) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of letter grades, this implies securing **'C'** grade or above in that subject/ course.

The student is deemed to have failed if the student does not submit a report on work carried out during Project Stage-II or does not make a presentation of the same before the evaluation committee as per schedule or secures less than minimum marks in either CIE or SEE or CIE+SEE taken together.

A student who has failed may reappear once for the evaluation when it is scheduled again; if the student fails again in the evaluation of "once such reappearance", the student has to reappear for the same in the subsequent semester as and when the evaluation is scheduled.

7.6   Promotion Rules

Table 2. Rules of Promotion

S. No.	Promotion	Conditions to be fulfilled
1	First year first semester to first year second semester	Regular course of study of first year first semester.
2	First year second semester to Second year first semester	(i) Regular course of study of first year second semester. (ii) Must have secured at least 20 credits out of 40 credits i.e., 50% credits up to first year second semester from all the relevant regular and supplementary examinations, whether the student appears in those examinations or not.
3.	Second year first semester to Second year second semester	Regular course of study of second year first semester.
4	Second year second semester to Third year first semester	(i) Regular course of study of second year second semester. (ii) Must have secured at least 48 credits out of 80 credits i.e., 60% credits up to second year second semester from all the relevant regular and supplementary examinations, whether the student appears in those examinations or not.
5	Third year first semester to Third year second semester	Regular course of study of third year first semester.

6	Third year second semester to Fourth year first semester	(i) Regular course of study of third year second semester. (ii) Must have secured at least 72 credits out of 120 credits i.e., 60% credits up to third year second semester from all the relevant regular and supplementary examinations, whether the student appears in those examinations or not.
7	Fourth year first semester to Fourth year second semester	Regular course of study of fourth year first semester.

7.7 A student detained due to lack of credits (as mention in Table 3), shall be promoted to the next year of study only after acquiring the required number of credits with the academic regulations of the batch into which he gets admitted to.

7.8 A student is deemed to have satisfied the academic requirements of B.Tech if the student fulfills the following requirements:

  i) The student registers all courses/subjects covering **160** credits as specified and listed in the course structure.

  ii) The student fulfills all the attendance and academic requirements for 160 credits.

  iii) The student earns all 160 credits by securing 'C' grade or above in each subject.

  iv) The student scores **CGPA ≥ 5.0** at the end of the B.Tech course.

  v) The student passes in all the mandatory courses.

7.9 The performance of the student in the 160 credits shall be considered for the calculation of the final CGPA **(at the end of undergraduate programme),** and shall be indicated in the grade card / marks memo of IV-year II semester.

7.10 If a student registers for 'additional/extra subjects' (in the parent department or other departments/branches of engineering) other than the subjects listed in the course structure of parent department totaling above 160 credits, then the performance in those 'extra subjects' although evaluated and graded using the same procedure as that of courses listed in the course structure will not be considered while calculating the SGPA and CGPA. For **'extra subjects'** registered, grade point and letter grade will be indicated in the grade card as a performance measure, subject to completion of the attendance and academic requirements as stated in regulations of Items 6, 7.1 and 7.1 above.

7.11 A student eligible to appear in the Semester End Examination for any subject/course, but is absent or failed (thereby failing to secure **'C' grade or above in UGP** and **'B' grade or above in PGP**) may reappear for that subject/course in the supplementary examination as and when conducted. In such cases, marks earned in CIE in that subject/course will be carried over, and added to the marks obtained in the supplementary SEE for evaluating performance in that subject.

8.0 Evaluation - Distribution and Weightage of Marks

8.1 The performance of a student in **Theory/Practical/Project Stage-II** will be evaluated for 100 marks each, with 40 marks allotted for CIE and 60 marks for SEE.

8.2 **Continuous Internal Evaluation of a Theory subject** is done through mid-term examinations for 30 marks, assignments for 5 marks and viva-voce/PPT/Poster Presentation/Case Study on a topic in the concerned subject for 5 marks during a semester as follows:

    (i) There shall be two mid-term examinations during the semester conducted for 30 marks consisting of two parts with a total duration of 2 hours: Part – A for 10 marks and Part – B for 20 marks.

    (ii) Part A is an objective paper or a quiz and shall consist of multiple-choice questions, fill-in the blanks, match the following, etc. for a total of 10 marks.

    (iii) Part B is a descriptive paper and shall contain 6 questions out of which, the student needs to answer 4 questions each carrying 5 marks.

    (iv) While the first mid-term examination shall be conducted for the first 50% syllabus, the second mid-term examination shall be conducted for the remaining 50% of the syllabus. The average of the two mid-term examinations shall be taken as final marks.

    (v) Two assignments are evaluated for 5 marks each. The first assignment should be submitted before the conduct of the first mid-term examination, and the second assignment should be submitted before the conduct of the second mid-term examination. The assignments shall be given by the subject teachers. The average of the two assignments shall be taken as the final marks.

    (vi) The remaining 5 marks may be evaluated by conducting viva-voce in the subject or by evaluating the performance of the student in PPT/Poster/Case-Study presentation on a topic in the concerned subject before second mid-term examination**.**

8.3 **The Semester End Examination for theory subjects** will be conducted by the college examination branch for 60 marks consisting of two parts: Part - A of 10 marks and Part-B of 50 marks.

    (i) Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.

    (ii) Part-B consists of ten questions (numbered from 2 to 11) with two questions from each unit with "either" "or" choice. This means that the student should answer five questions from either of the two questions from each unit.

    (iii)The duration of Semester End Examination is 3 hours.

Note: For the subject, Computer Aided Engineering Graphics, the pattern of evaluation for CIE and SEE is same as that of a theory subject.

8.4 **Continuous Internal Evaluation of a practical subject** is done for 40 marks during the semester as follows:

(i) A write-up on day-to-day experiments in the laboratory (in terms of aim, components/procedure, expected outcome) shall be evaluated for 10 marks

(ii) 10 marks are awarded either for the performance in viva-voce (or) case study presentation (or) application development (or) poster presentation.

(iii) Internal practical examination shall be conducted by the concerned laboratory teacher for 10 marks.

(iv) The remaining 10 marks are awarded for laboratory project, which consists of the design (or) software/hardware model presentation (or) app development (or) prototype presentation at the end of the completion of laboratory course and before semester end practical examination.

8.5 **The Semester End Examination for a practical subject** shall be conducted with an external examiner and the laboratory teacher. The external examiner shall be appointed by the Principal/Vice-Principal.

The Semester End Examination (SEE) for a practical subject shall be held for 3 hours for a total of 60 marks evaluated as follows:

(i) 10 marks for write-up
(ii) 15 marks for experiment/program
(iii) 15 marks for evaluation of results
(iv) 10 marks for presentation on another experiment/program in the same laboratory course and
(v) 10 marks for viva-voce on concerned laboratory course.

8.6 **Mandatory/Non-Credit/Audit Courses** are evaluated for 100 internal marks. A student shall secure 40% of marks (40 marks out of 100 marks) in the CIE for passing the same.

8.7 The student is eligible to appear in a SEE of a Theory/Practical subject if the student scores ≥ **35%** of marks (i.e. 14 marks out of 40 marks) in CIE. In case, the student appears in a SEE without scoring a minimum of 35% of marks in CIE, his performance in SEE for that subject shall stand cancelled in spite of appearing in the SEE.

8.8 In each of the Theory/Practical subjects the student shall earn 35% of marks (i.e. 14 marks out of 40 marks) in CIE, 35% of marks (i.e. 21 marks out of 60) in SEE and a total of 40% of marks (i.e. 40 marks out of 100 marks) in CIE and SEE taken together.

8.9 The evaluation of courses having **only CIE** in I year I semester and II year II semester is as follows:

- **Elements of CE/EEE/ME/ECE/CSE/Chem. Engg./Met. Engg.** in I year I semester is evaluated for **50 marks**. The CIE for 50 marks shall be done through first and second mid-term examinations. The average marks of two mid-term examinations is taken as final marks in CIE. Student shall have to earn 40% i.e. 20 marks out of 50 marks in the average of two mid-term examinations. **There shall be no external evaluation.** The student is deemed to have failed, if he (i) is absent as per schedule, or (ii) secures less than 40% marks in this course.

  For CSE/CSE (AI & ML), the CIE is done for 50 marks as follows:

  ➢ There shall be two mid-term examinations during the semester conducted for 40 marks consisting of two parts with a total duration of 2 hours: Part A for 20 marks and Part B for 20 marks.

  ➢ Part A is an objective paper or a quiz and shall consist of multiple-choice questions, fill-in-the blanks, match the following, etc. for a total of 20 marks.

  ➢ Part B is a descriptive paper and shall contain 6 questions out of which, the student needs to answer 4 questions each carrying 5 marks.

  ➢ While the first mid-term examination shall be conducted for the first 50% syllabus, the second mid-term examination shall be conducted for the remaining 50% of the syllabus. The average of the two mid-term examinations shall be taken as final marks.

  ➢ Two assignments are evaluated for 5 marks each. The first assignment should be submitted before the conduct of the first mid-term examination, and the second assignment should be submitted before the conduct of the second mid-term examination. The assignments shall be given by the subject teachers. The average of the two assignments shall be taken as the final marks.

  ➢ The remaining 5 marks may be evaluated by conducting viva-voce in the subject or by evaluating the performance of the student in PPT/Poster/Case-Study presentation on a topic in the concerned subject before second mid-term examination**.**

  For all other branches, the CIE is done for 50 marks as follows:

  ➢ A write-up on day-to-day experiments in the laboratory (in terms of aim, components/procedure, expected outcome) shall be evaluated for 10 marks

  ➢ 10 marks are awarded either for the performance in viva-voce (or) case study presentation (or) application development (or) poster presentation.

  ➢ Internal practical examination shall be conducted by the concerned laboratory teacher for 15 marks.

> ➢ The remaining 15 marks are awarded for laboratory project, which consists of the design (or) model presentation (or) prototype presentation at the end of the completion of laboratory course and before semester end practical examination.

- • **Real-Time/Field-Based Research Project** in II year II semester is evaluated for **50 marks**. The internal evaluation for 50 marks shall take place during the first and second mid-term examinations. The average marks of two mid-term examinations is taken as final marks in CIE. Student shall have to earn 40% i.e. 20 marks out of 50 marks in the average of the two mid-term examinations. There shall be no external evaluation. The student is deemed to have failed, if he (i) does not submit a report on the Project, or (ii) does not make a presentation of the same before the internal committee as per schedule, or (ii) secures less than 40% marks in this course.

8.10 A student shall undergo **Industry Training or do Internship/Industry-Oriented Mini-Project or attend a Skill Development Course (SDC) or publish a paper in reputed journal** and register for the same immediately after II year II semester end examinations and pursue it during summer vacation/semester break and continue through III year I and II semesters without the regular course work being affected by the same.

The report of the same may be submitted and presented before the committee in III year II semester before SEEs which shall be evaluated for **100 marks**.

The committee consists of an external examiner, Head of the Department, supervisor from industry (if any) for the Industry-Oriented Mini-Project (or) Internship, an internal supervisor and a senior faculty member of the department.

There shall be **no internal marks** for Industry Training (or) Internship (or) Mini-Project (or) Skill Development Courses (or) Paper Presentation in reputed journal.

8.11 UG Major Project work shall be carried out in two stages: Project Stage I and Project Stage II.

8.12 **Project Stage I** is initiated at the beginning of the IV year I semester. A report in consultation with the project supervisor allotted by the Head of the department shall be submitted by the student. The report shall consist of abstract, details of the project, literature review, objectives and plan of action and presented before the departmental committee for evaluation.

The departmental committee consisting of Head of the Department, project supervisor and a senior faculty member shall evaluate and approve the project work before second mid-term examination of IV year I semester.

The student is not eligible to register for the UG Major Project work if he does not submit a report on Project Stage I or does not make a presentation of the same before the evaluation committee as per schedule.

Project Stage I shall be evaluated for **100 internal marks** (CIE) by the departmental committee. A student is deemed to have failed if the student does not submit a report on work carried out during Project Stage-I or does not make a presentation of the same before the evaluation committee as per schedule or secures less than minimum marks in the evaluation.

A student who has failed may reappear once for the above evaluation, when it is scheduled again; if he fails again in the 'one reappearance' also, he has to reappear for the same in the next semester as and when it is scheduled.

8.13   **Project Stage II** is the actual implementation of the project work during IV year II semester. The student shall submit a Project Report at the end of IV year II semester.

For Project Stage II, **60 marks of SEE** shall be evaluated by an external examiner and **40 marks of CIE** shall be evaluated by the departmental committee and the project supervisor.

Out of 40 marks for CIE, the departmental committee consisting of Head of the Department, project supervisor and a senior faculty member shall evaluate the project work for 20 marks and project supervisor shall evaluate for 20 marks.

The topics for Industry-Oriented Mini-Project/Internship/SDC etc. and the UG Major Project work shall be different.

The student is deemed to have failed, if he (i) does not submit a report on the project, or (ii) does not make a presentation of the same before the external examiner as per schedule, or (iii) secures less than 35% in either of the CIE or SEE or (iv) secures less than 40% marks in the sum total of the CIE and SEE of project stage-II taken together.

For conducting viva-voce of the UG Major Project, Principal selects an external examiner from the list of experts in the relevant branch submitted by the HoD.

A student, who has failed may reappear once for the above evaluation, when it is scheduled again; if student fails again in the 'one reappearance' he has to reappear for the same in the subsequent semester, as and when it is scheduled.

8.14   If the marks secured by a student in the Continuous Internal Evaluation in a subject/course are less than 35% then the student must re-register in the failed subject within four weeks of commencement of the class work in the next academic year. (Head of the Department shall ensure no overlaps in the time-tables of the re-registered subject and the time-table of the semester to which the student currently belongs to)

In the event of the student taking this chance, his Continuous Internal Evaluation marks for 40 and Semester End Examination marks for 60 obtained in the previous attempt stand cancelled.

A student shall be given a one-time chance to re-register for a maximum of two subjects in addition to the subjects/courses of the current/regular semester.

9.0   Grading Procedure

9.1   Grades will be awarded to indicate the performance of students in each of the Theory Subjects, Laboratory/Practical subjects, Real-Time/Field-Based Research Project, Industry-Oriented Mini-Project/Internship/SDC, Minor Courses, Project Stage I, and Project Stage II, etc. based on the percentage of marks obtained in CIE+SEE as specified in item 8 above.

9.2   As a measure of the performance of a student, a 10-point absolute grading system using the following letter grades (as per UGC/AICTE guidelines) and corresponding percentage of marks shall be followed:

Table 3. Grading Procedure of UGP

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
Greater than 80 and less than 90%	A$^+$ (Excellent)	9
Greater than 70 and less than 80%	A (Very good)	8
Greater than 60 and less than 70%	B+ (Good)	7
Greater than 50 and less than 60%	B (Average)	6
Greater than 40 and less than 50%	C (Pass)	5
Below 40%	F (Fail)	0
Absent	Ab	0

9.3   A student who has obtained an **'F'** grade in any subject is deemed to have **'failed'** and is required to reappear as a 'supplementary student' in the Semester End Examination, as and when conducted. In such cases, marks scored in CIE (internal marks) in those subjects will remain the same as those obtained earlier.

9.4   To a student who has not appeared for an examination in any subject, **'Ab'** grade will be allocated in that subject, and he is deemed to have **'Failed'**. A student will be required to appear as a 'supplementary student' in the Semester End Examination, as and when conducted. In such a case, the marks scored in CIE (internal marks) in those subjects will remain the same as those obtained earlier.

9.5   A letter grade does not indicate any specific percentage of marks secured by the student it only indicates the range of percentage of marks.

9.6   A student earns Grade Point (GP) in each subject/course, on the basis of the letter grade secured in that subject/course (excluding Mandatory Courses). The corresponding Credit Points (CP) are computed by multiplying the grade point with credits for that particular subject/course.

Credit Points (CP) = Grade Point (GP) $\times$ No. of Credits for a Course

9.7   A student passes the subject/ course only when **GP $\geq$ 5 ('C' grade or above)**

9.8 The Semester Grade Point Average (SGPA) is calculated by dividing the sum of credit points $(\sum CP)$ secured from all subjects/courses registered in a semester, by

the total number of credits registered during that semester. SGPA is rounded off to two decimal places. SGPA is thus computed as:

$$SGPA = \frac{\sum_{i=1}^{N} C_i G_i}{\sum_{i=1}^{N} C_i}$$

where 'i' is the subject indicator index (takes into account all subjects in a semester), 'N' is the number of subjects registered in the semester (as specifically required and listed in the course structure of the parent department), C_i is the number of credits allotted to the ith subject, and G_i represents the Grade Points (GP) corresponding to the Letter Grade awarded for the ith subject.

9.9 The Cumulative Grade Point Average (CGPA) is a measure of the overall cumulative performance of a student in all semesters considered for registration. The CGPA is the ratio of the total credit points secured by a student in all registered courses in all semesters, and the total number of credits registered in all the semesters. CGPA is rounded off to two decimal places. CGPA is thus computed from the I year II semester onwards at the end of each semester as per the formula

$$CGPA = \frac{\sum_{j=1}^{M} C_j G_j}{\sum_{j=1}^{M} C_j}$$

where 'M' is the total number of subjects (as specifically required and listed in the course structure of the parent department) the student has 'registered' from the 1st semester onwards up to and inclusive of the semester S, 'j' is the subject indicator index (takes into account all subjects from 1 to S semesters), C_j is the number of credits allotted to the jth subject, and G_j represents the Grade Points (GP) corresponding to the Letter Grade awarded for the jth subject. After registration, and completion of I year I semester however, the SGPA of that semester itself may be taken as the CGPA, as there are no cumulative effects.

Table 4. Illustration of calculation of SGPA:

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
Course 1	4	A	8	4 x 8 = 32
Course 2	4	O	10	4 x 10 = 40
Course 3	4	C	5	4 x 5 = 20
Course 4	3	B	6	3 x 6 = 18
Course 5	3	A+	9	3 x 9 = 27
Course 6	3	C	5	3 x 5 = 15
	21			152

SGPA = 152/21 = 7.24

Table 5. Illustration of Calculation of CGPA up to 3rd Semester

Semester	Course/ Subject Title	Credits Allotted	Letter Grade Secured	Corresponding Grade Point (GP)	Credit Points (CP)
I	Course 1	3	A	8	24
I	Course 2	3	O	10	30
I	Course 3	3	B	6	18
I	Course 4	4	A	8	32
I	Course 5	3	A+	9	27
I	Course 6	4	C	5	20
II	Course 7	4	B	6	24
II	Course 8	4	A	8	32
II	Course 9	3	C	5	15
II	Course 10	3	O	10	30
II	Course 11	3	B+	7	21
II	Course 12	4	B	6	24
II	Course 13	4	A	8	32
II	Course 14	3	O	10	30
III	Course 15	2	A	8	16
III	Course 16	1	C	5	5
III	Course 17	4	O	10	40
III	Course 18	3	B+	7	21
III	Course 19	4	B	6	24
III	Course 20	4	A	8	32
III	Course 21	3	B+	7	21
	Total Credits	**69**		**Total Credit Points**	**518**

CGPA = 518/69 = 7.51

The calculation process of CGPA illustrated above will be followed for each subsequent semester until 8th semester. The CGPA will be indicated in the grade card at the end of the 8th semester.

9.10 For merit ranking or comparison purposes or any other listing, only the 'rounded off' values of the CGPAs will be used.

9.11 SGPA will be mentioned in the semester Memorandum of Grades if all subjects of that semester are passed in first attempt. Otherwise the SGPA shall be mentioned only on the Memorandum of Grades of the last attempt in which he passed the remaining failed subjects in a semester. However, mandatory courses will not be taken into consideration for grading and calculation of SGPA and CGPA.

10.0 Passing Standards

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10.1 A student shall be declared successful or 'passed' in a semester if he secures a GP ≥ 5.0 (**'C'** grade or above) in every subject/course of UGP and GP ≥ 6.0 (**'B'** grade or above) in every subject/course of PGP in that semester

10.2 After the completion of each semester, a grade card or grade sheet shall be issued to all the registered students of that semester, indicating the letter grades and credits earned. It will show the details of the courses registered (course code, title, number of credits), grade earned, credits earned, SGPA and CGPA. **There is no exemption of credits in any case.**

11.0 Declaration of results

11.1 Computation of SGPA and CGPA are done using the procedure listed in 9.6 to 9.9.

11.2 For computing final % of marks equivalent to the computed final CGPA, the following formula may be used:

$$\% \ of \ marks = (final \ CGPA - 0.5) \times 10$$

12.0 Award of Degree

12.1 A student who registers for all the specified subjects/courses as listed in the course structure and secures the required number of 160 credits (with CGPA ≥ 5.0), within 8 academic years from the date of commencement of the first academic year, shall be declared to have **'qualified'** for the award of B.Tech degree in the branch of engineering selected at the time of admission.

12.2 A student who qualifies for the award of the degree as listed in item 12.1 shall be placed in the following classes.

12.3 A student with final CGPA (at the end of the undergraduate programme) ≥ 8.00, and fulfilling the following conditions - shall be placed in **'First Class with Distinction'.** However, he

(i) Should have passed all the subjects/courses in **'First Appearance'** within the first 4 academic years (or 8 sequential semesters) from the date of commencement of first year first semester.

(ii) Should not have been detained or prevented from writing the Semester End Examinations in any semester due to shortage of attendance or any other reason.

A student not fulfilling any of the above conditions with final CGPA ≥ 8 shall be placed in 'First Class'.

12.4 Students with final CGPA (at the end of the undergraduate programme) ≥ 7.0 but < 8.00 shall be placed in **'First Class'**.

12.5 Students with final CGPA (at the end of the undergraduate programme) ≥ 6.00 but < 7.00 shall be placed in **'Second Class'**.

12.6 All other students who qualify for the award of the degree (as per item 12.1), with final CGPA (at the end of the undergraduate programme) ≥ 5.00 but < 6, shall be placed in **'pass class'**.

12.7 A student with final CGPA (at the end of the undergraduate programme) < 5.00 will not be eligible for the award of the degree.

12.8 Students fulfilling the conditions listed under item 12.3 alone will be eligible for award of **'Gold Medal'**.

12.9 Award of 2-Year B.Tech. Diploma Certificate

i) A student who exits after two years shall be awarded **2-Year UG Diploma Certificate** in the concerned discipline of engineering if the student completes all academic and attendance requirements, and earns 80 credits up to B.Tech II year II semester within 4 years from the date of admission.

ii) A student who exits after two years and is awarded 2-Year UG Diploma Certificate is allowed to rejoin after an year and complete the remaining years of study of 4-Year B.Tech program along with new batch of students by registering the courses/subjects of III year I semester before commencement of the class work for that semester.

iii) The student who exits the 4-Year B.Tech program after II year of study and chooses to rejoin the B.Tech program must surrender the 2-Year UG Diploma Certificate awarded to him subject to the eligibility for completion of Course/Degree.

iv) A student may be permitted to take a break of one year after the completion of II year II semester or III year II semester and allowed to reenter the course in **next academic year** to complete the remaining years of study and fulfill all the academic credentials within a stipulated duration i.e. double the duration of the course (i.e. within 8 academic years for 4-year program).

13. B. Tech. with Minor program

- A student shall be awarded B.Tech with Minor, if he/she earns a minimum of 18 credits in the respective minor program in addition to the 160 credits of 4 year B.Tech program. These credits shall be acquired by either registering courses in the respective minor program offered by the college or through MOOCs equivalent to the courses offered by the university.
- A student enrolled in a B.Tech program may do a Minor in another area *(ex., B. Tech. in Mechanical Engineering with Minor in AI&ML)*.
- The additional **18 credits for B.Tech with Minor program may be obtained** between the **5th** and **8th** semester within the 4-year B. Tech program.

13.1 The following are the recommended areas for Minor programs:

Students can chose only one minor program (if offered) from the following programs offered by the various departments.

S. No.	Minor Program	Eligible branch of students	@ Offering Department
1.	Artificial Intelligence & Machine Learning	All branches, except B. Tech. CSE (AI&ML)	CSE
2.	Cyber Security	All branches	CSE
3.	Data Science	All branches	CSE
4.	IoT	All branches	ECE
5.	Robotics	All branches	ME
6.	Electric Vehicles	All branches	EEE
7.	Construction Technology	All branches.	CE

@: As per AICTE guidelines.

13.2 Academic Regulations for B. Tech. with Minor Program:

a) The duration of the course and all the **academic regulations are on par with regular 4-years B. Tech. program.**

b) The weekly instruction hours, internal and external evaluation, and award of grades for courses registered in minor program are on par with courses of 4-year B.Tech. program.

c) After registering for the Minor program, if a student is unable to earn the required 18 credits in a specified duration (twice the duration of the course i.e. 8 years), he/she shall not be awarded Minor degree. However, if the student earns the required 160 credits of B.Tech., he/she will be awarded only B. Tech degree in the concerned branch.

d) There is no transfer of credits from Minor program to regular B.Tech program and vice-versa.

e) The additional 18 credits shall be earned by either registering courses in the respective minor program offered by the host department in the college or do a course in MOOCs platform.

f) For the course selected under MOOCS platform following guidelines may be followed:

    i. Prior to registration of MOOCS courses, formal approval of the courses by the University/College is essential. The approval is based on the

parameters like the institute / agency offering the course, syllabus, credits, duration of the programme and mode of evaluation etc.

ii. Minimum credits for MOOCs course must be equal to or more than the credits specified in the Minor course structure provided by the University/College.

iii. Only grades/marks above pass-grade/pass-marks shall be considered for inclusion of grades in minor grade memo.

iv. Any expenses incurred for the MOOCS courses are to be met by the students only.

g) A student after registering for a minor program can withdraw at any time. On withdrawal, a student will be awarded only B.Tech in the concerned branch if he fulfils all academic requirements and earns 160 credits.

i) A student can choose only one minor program along with his/her basic engineering degree. A student who chooses an honours program is not eligible to choose a minor program and vice-versa.

j) A student can graduate with a minor if he/she fulfils the requirements of regular B.Tech. program and the requirements of minor program.

13.3. Eligibility Conditions to Register for A Minor Program

i) Students who have earned all the credits (no active backlogs) till II year I semester at the time of entering III year I semester are eligible to register for minor program.

ii) A prior approval of mentor and Head of the Department for enrolment into minor program is mandatory before the commencement of III year I semester.

iii) Registration to a minor program is purely the choice of the students. Only top 50% of the total class in each specialization are eligible to register for minor programs. The merit is based on the overall percentage of **marks without active backlogs up** to 3rdsemester (II-year I semester).

13.4 Registration for the Courses in Minor Program

i) At the beginning of each semester, just before the commencement of classes, students shall register for the courses/subjects listed in the course structure of minors program along with the courses/subjects of regular B.Tech. program.

ii) The maximum number of courses/subjects a student can register in a minor program in a semester is limited to two (three in case a laboratory course is included in the course structure for the semester).

iii) The registration fee is **Rs. 1000/- per one credit**.

14.0   Withholding of results

14.1   If the student has not paid the fees to the University at any stage, or has dues pending due to any reason whatsoever, or if any case of indiscipline is pending, the result of the student may be withheld and the student will not be allowed to go into the next higher semester. The award or issue of the degree may also be withheld in such cases.

15.0   **Transitory Regulations**

A. For students detained due to shortage of attendance:

1. A Student who has been detained in I year of R18 regulations due to lack of attendance, shall be permitted to join I year I semester of R22 regulations and he is required to complete the study of B.Tech+M.Tech programme within the stipulated period of ten academic years from the date of first admission in I year.

2. A student who has been detained in any semester of II, III and IV years of R18 regulations for want of attendance shall be permitted to join the corresponding semester of R22 regulations and is required to complete the study of B.Tech+M.Tech within the stipulated period of ten academic years from the date of first admission in I year. The R22 academic regulations under which a student has been readmitted shall be applicable to that student from that semester. See rule (C) for further Transitory Regulations.

B. For students detained due to shortage of credits:

3. A student of R18 regulations who has been detained due to lack of credits shall be promoted to the next semester of R22 regulations only after acquiring the required number of credits as per the corresponding regulations of his/her first admission. The total credits required are 160 including both R18 & R22 regulations. The student is required to complete the study of B.Tech. within the stipulated period of eight academic years from the year of first admission. The R22 academic regulations are applicable to a student from the year of readmission. See rule (C) for further Transitory Regulations.

C. For readmitted students in R22 Regulations:

1. A student who has failed in any subject under any regulation has to pass those subjects in the same regulations.

2. The maximum credits that a student acquires for the award of degree, shall be the sum of the total number of credits secured in all the regulations of his/her study including R22 regulations. **There is NO exemption of credits in any case.**

3. If a student is readmitted to R22 Regulations and has any subject with 80% of syllabus common with his/her previous regulations, that particular subject in R22 regulations will be substituted by another subject suggested by the college.

Note: If a student readmitted to R22 regulations and has not studied any subjects/topics in his/her earlier regulations of study which is prerequisite for the subjects in R22 regulations, the student shall attend remedial classes conducted by the department to cover those subjects/topics.

16.0 Student Transfers

16.1 There shall be no branch transfers after the completion of admission process.

16.2 There shall be no transfers from one college/stream to another within the constituent colleges and units of Jawaharlal Nehru Technological University Hyderabad.

17.0 Scope

17.1 The academic regulations should be read as a whole, for the purpose of any interpretation.

17.2 In case of any ambiguity in the academic regulations, course structure and/or syllabus, students may contact the chairperson, Board of Studies and Principal for clarification.

17.3 The university/college may change or amend the academic regulations, course structure or syllabi at any time, and the changes or amendments made shall be applicable to all students with effect from the dates notified by the authorities of the university/college.

17.4 Where the words "he", "him", "his", occur in the regulations, they include "she", "her", "hers".

17.5 Where the words "subject" or "subjects", occur in the regulations, they also imply "course" or "courses".

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18. Academic Regulations for B.Tech (Lateral Entry Scheme) from the Academic Year 2023-2024

18.1. Eligibility for the award of B.Tech Degree (LES)

The LES students after securing admission shall pursue a course of study for not less than three academic years and not more than six academic years.

18.2   The student shall register for 120 credits and secure 120 credits with CGPA ≥ 5 from II year to IV-year for the award of B.Tech degree.

18.3.   The students, who fail to fulfill the requirement for the award of the degree in six academic years from the year of admission, shall be forfeited their seat in B.Tech.

18.4.   The attendance requirements of B. Tech. (Regular) shall be applicable to B.Tech (LES).

18.5.   Promotion rule

S. No	Promotion	Conditions to be fulfilled
1	Second year first semester to second year second semester	Regular course of study of second year first semester.
2	Second year second semester to third year first semester	(i) Regular course of study of second year second semester. (ii) Must have secured at least 24 credits out of 40 credits i.e., 60% credits up to second year second semester from all the relevant regular and supplementary examinations, whether the student appears in those examinations or not.
3	Third year first semester to third year second semester	Regular course of study of third year first semester.
4	Third year second semester to fourth year first semester	(i) Regular course of study of third year second semester. (ii) Must have secured at least 48 credits out of 80 credits i.e., 60% credits up to third year second semester from all the relevant regular and supplementary examinations, whether the students appears in those examinations or not.
5.	Fourth year first semester to fourth year second semester	Regular course of study of fourth year first semester.

6. All the other regulations as applicable to B. Tech. 4-year degree course (Regular) will hold good for B. Tech. (Lateral Entry Scheme).

7. LES students are not eligible for 2-Year B. Tech. Diploma Certificate.

19. Malpractices Rules

The following malpractice rules are applicable to Internal Examinations as well as SEE of Regular as well as Supplementary Examinations:

	Nature of Malpractices	Punishment
	If the candidate:	
1 (a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which he is appearing but has not made use of the same. Material shall also include any marks on the body of the candidate which can be used as an aid in the subject of the examination	Expulsion from the examination hall and cancellation of the performance in that subject only.
1 (b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The hall ticket of the candidate is to be cancelled.

3	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate, who has been impersonated, shall be cancelled in all the subjects of the examination (including practical and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4	Smuggles in the answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
5	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.

| 6 | Refuses to obey the orders of the Chief Superintendent / Assistant – Superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall. Organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall. Assaults the officer-in-charge or any person on duty in or outside the examination hall or any of his relations whether by words, either spoken or written or by signs. Indulges in any other act of misconduct or mischief which results in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination. | In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them. |
| 7 | Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall. | Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. |

8	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.
9	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester / year examinations.
12	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the College / University for further action or punishment	

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