



Internal Assessment

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

(Established by State Act No. 30 of 2008)

Kukatpally, Hyderabad, Telangana (India).

ACADEMIC REGULATIONS (R22) FOR B.TECH REGULAR STUDENTS **WITH EFFECT FROM THE ACADEMIC YEAR 2022-23**

1.0 Under-Graduate Degree Programme in Engineering & Technology (UGP in E&T)

Jawaharlal Nehru Technological University Hyderabad (JNTUH) offers a 4-year (8 semesters) **Bachelor of Technology (B.Tech.)** degree programme, under Choice Based Credit System (CBCS) at its non-autonomous constituent and affiliated colleges with effect from the academic year **2022-23**.

2.0 Eligibility for Admission

- 2.1** Admission to the undergraduate(UG) programme shall be made either on the basis of the merit rank obtained by the qualified student in entrance test conducted by the Telangana State Government (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 B.Tech. Programme Structure

- 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 forfeit seat in B.Tech course. Each student shall secure 160 credits (with CGPA \geq 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 and abbreviations used in these academic regulations/ norms, which are listed below.
- 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 or Tutorials.
- 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. degree programmes) are broadly classified as follows. The University has followed almost all the guidelines issued by AICTE/UGC.

S. No.	Broad Course Classification	Course Group/ Category	Course Description
1	Foundation Courses (FnC)	BS – Basic Sciences	Includes Mathematics, Physics and Chemistry subjects
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 (subset of HS)
11	Mandatory Courses (MC)	-	Mandatory Courses (non-credit)

4.0 Course Registration

- 4.1 A ‘faculty advisor or counselor’ shall be assigned to a group of 20 students, who will advise the students about the undergraduate programme, its course structure and curriculum, choice/option for subjects/ courses, based on their competence, progress, pre-requisites 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 ‘current 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/counselor, which should be submitted to the college academic section through the Head of the Department. A copy of it shall be retained with the Head of the Department, Faculty Advisor/ Counselor 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 **progress** and SGPA/ CGPA, and completion of the ‘**pre-requisites**’ as indicated for various subjects/ courses, in the department course structure and syllabus contents.
- 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/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; further, alternate choices also will not be considered.

However, if the subject/ course that has already been listed for registration by the Head of the Department in a semester could not be offered due to any inevitable or unexpected reasons, then the student shall be allowed to have alternate choice either for a new subject (subject to offering of such a subject), or for another existing subject (subject to availability of seats). Such alternate arrangements will be made by the Head of the Department, with due notification and time-framed schedule, within a **week** after 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/ counselor ‘within a period of 15 days’ from the beginning of the current semester.

4.9 Open Electives: The students have to choose three Open Electives (OE-I, II & III) from the list of Open Electives given by other departments. However, the student can opt for an Open Elective subject offered by his own (parent) department, if the student has not registered and not studied that subject under any category (Professional Core, Professional Electives, Mandatory Courses etc.) offered by parent department in any semester. Open Elective subjects already studied should not repeat/should not match with any category (Professional Core, Professional Electives, Mandatory Courses etc.) of subjects even in the forthcoming semesters.

4.10 Professional Electives: The students have to choose six Professional Electives (PE-I to VI) from the list of professional electives given.

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** (lab/ practical may be included with the corresponding theory subject in the same semester) in any semester. However, selection of choice for students will be based on - ‘**first come first serve** basis and CGPA criterion’ (i.e. the first focus shall be on early **on-line entry** from the student for registration in that semester, and the second focus, if needed, will be on CGPA of the student).

5.3 If more entries for registration of a subject come into picture, then the Head of the Department concerned shall decide, whether or not to offer such a subject/ course for **two (or multiple) sections**.

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

6.0 Attendance requirements:

6.1 A student shall be 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 attendance in mandatory courses like Environmental Science, Constitution of India, Intellectual Property Rights, and Gender Sensitization Lab) for that semester. **Two periods** of attendance for each theory subject shall be considered, if the student appears for the mid-term examination of that subject. **This attendance should also be included in the attendance uploaded every fortnight in the University Website.**

- 6.2 Shortage of attendance in aggregate upto 10% (65% and above, and below 75%) in each semester may be condoned by the college academic committee on genuine and valid grounds, based on the student's representation with supporting evidence.
- 6.3 A stipulated fee shall be payable for condoning of shortage of attendance.
- 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 any semester are not eligible to take their end examinations of that semester. They get detained and their registration for that semester shall stand cancelled,** including all academic credentials (internal marks etc.) of that semester. **They will not be promoted to the next semester.** They may seek re-registration for all those subjects registered in that semester in which the student is detained, by seeking re-admission into that semester as and when offered; 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 alternate electives may be chosen from the **same** set of elective subjects offered under that category.
- 6.6 A student fulfilling the attendance requirement in the present semester shall not be eligible for readmission into the same class.

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 shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course, if 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 shall be deemed to have satisfied the academic requirements and earned the credits allotted to Real-time Research Project (or) Field Based Research Project (or) Industry Oriented Mini Project (or) Internship (or) Seminar, if the student secures not less than 40% marks (i.e. 40 out of 100 allotted marks) in each of them. The student is deemed to have failed, if he (i) does not submit a report on Industry Oriented Mini Project/Internship, or (ii) not make a presentation of the same before the evaluation committee as per schedule, or (iii) secures less than 40% marks in Real-time Research

Project (or) Field Based Research Project (or) Industry Oriented Mini Project (or) Internship evaluations.

A student may reappear once for each of the above evaluations, when they are scheduled again; if the student fails in such 'one reappearance' evaluation also, the student has to reappear for the same in the next subsequent semester, as and when it is scheduled.

7.3 Promotion Rules

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 takes 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 takes 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 takes those examinations or not.
7	Fourth year first semester to	Regular course of study of fourth year first

	Fourth year second semester	semester.
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- 7.4** A student (i) shall register for all courses/subjects covering 160 credits as specified and listed in the course structure, (ii) fulfills all the attendance and academic requirements for 160 credits, (iii) earn all 160 credits by securing SGPA ≥ 5.0 (in each semester), and—CGPA ≥ 5 (at the end of 8 semesters), (iv) **passes all the mandatory courses**, to successfully complete the undergraduate programme. The performance of the student in these 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.
- 7.5** If a student registers for ‘**extra subjects**’ (in the parent department or other departments/branches of Engg.) other than those listed subjects totaling to 160 credits as specified in the course structure of his department, the performances in those ‘**extra subjects**’ (although evaluated and graded using the same procedure as that of the required 160 credits) will not be considered while calculating the SGPA and CGPA. For such ‘**extra subjects**’ registered, percentage of marks and letter grade alone will be indicated in the grade card / marks memo as a performance measure, subject to completion of the attendance and academic requirements as stated in regulations Items 6 and 7.1 – 7.4 above.
- 7.6** A student eligible to appear in the semester end examination for any subject/ course, but absent from it or failed (thereby failing to secure ‘**C**’ grade or above) may reappear for that subject/ course in the supplementary examination as and when conducted. In such cases, internal marks (CIE) assessed earlier for that subject/ course will be carried over, and added to the marks to be obtained in the SEE supplementary examination for evaluating performance in that subject.
- 7.7** A student **detained in a semester due to shortage of attendance may be re-admitted in the same semester in the next academic year for fulfillment of academic requirements**. The academic regulations under which a student has been re-admitted shall be applicable. Further, no grade allotments or SGPA/ CGPA calculations will be done for the entire semester in which the student has been detained.
- 7.8** A student **detained due to lack of credits, shall be promoted to the next academic year only after acquiring the required number of academic credits**. The academic regulations under which the student has been readmitted shall be applicable to him.
- 8.0 Evaluation - Distribution and Weightage of Marks**
- 8.1** The performance of a student in every subject/course (including practicals and Project Stage – I & II) will be evaluated for 100 marks each, with 40 marks allotted for CIE (Continuous Internal Evaluation) and 60 marks for SEE (Semester End-Examination).

8.2 In CIE, for theory subjects, during a semester, there shall be two mid-term examinations. Each Mid-Term examination consists of two parts i) **Part – A** for 10 marks, ii) **Part – B** for 20 marks with a total duration of 2 hours as follows:

1. Mid Term Examination for 30 marks:
 - a. Part - A : Objective/quiz paper for 10 marks.
 - b. Part - B : Descriptive paper for 20 marks.

The objective/quiz paper is set with multiple choice, fill-in the blanks and match the following type of questions for a total of 10 marks. The descriptive paper shall contain 6 full questions out of which, the student has to answer 4 questions, each carrying 5 marks. The **average of the two Mid Term Examinations** shall be taken as the final marks for Mid Term Examination (for 30 marks).

The remaining 10 marks of Continuous Internal Evaluation are distributed as:

2. Assignment for 5 marks. (**Average of 2 Assignments** each for 5 marks)
3. Subject Viva-Voce/PPT/Poster Presentation/ Case Study on a topic in the concerned subject for 5 marks.

While the first mid-term examination shall be conducted on 50% of the syllabus, the second mid-term examination shall be conducted on the remaining 50% of the syllabus.

Five (5) marks are allocated for assignments (as specified by the subject teacher concerned). 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 average of the two assignments shall be taken as the final marks for assignment (for 5 marks).

Subject Viva-Voce/PPT/Poster Presentation/ Case Study on a topic in the subject concerned for 5 marks before II Mid-Term Examination.

- The Student, in each subject, shall have to 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 Over all 40% of marks (i.e. 40 marks out of 100 marks) both CIE and SEE marks put together.

The student is eligible to write Semester End Examination of the concerned subject, if the student scores $\geq 35\%$ (14 marks) of 40 Continuous Internal Examination (CIE) marks.

In case, the student appears for Semester End Examination (SEE) of the concerned subject but not scored minimum 35% of CIE marks (14 marks out of 40 internal marks), his performance in that subject in SEE shall stand cancelled inspite of appearing the SEE.

There is NO Computer Based Test (CBT) for R22 regulations.

The details of the end semester question paper pattern are as follows:

8.2.1 The semester end examinations (SEE), for theory subjects, will be conducted for 60 marks consisting of two parts viz. i) **Part- A** for 10 marks, ii) **Part - B** for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of five questions (numbered from 2 to 6) carrying 10 marks each. Each of these questions is from each unit and may contain sub-questions. For each question there will be an “either” “or” choice, which means that there will be two questions from each unit and the student should answer either of the two questions.
- The duration of Semester End Examination is 3 hours.

8.2.2 For the subject, **Computer Aided Engineering Graphics**, the Continuous Internal Evaluation (CIE) and Semester End Examinations (SEE) evaluation pattern is same as for other theory subjects.

8.3 For practical subjects there shall be a Continuous Internal Evaluation (CIE) during the semester for 40 marks and 60 marks for semester end examination. Out of the 40 marks for internal evaluation:

1. A write-up on day-to-day experiment in the laboratory (in terms of aim, components/procedure, expected outcome) which shall be evaluated for 10 marks
2. **10 marks for viva-voce** (or) tutorial (or) case study (or) application (or) poster presentation of the course concerned.
3. Internal practical examination conducted by the laboratory teacher concerned shall be evaluated for 10 marks.
4. The remaining 10 marks are for Laboratory Report/Project and Presentation, which consists of the Design (or) Software / Hardware Model Presentation (or) App Development (or) Prototype Presentation submission which shall be evaluated after completion of laboratory course and before semester end practical examination.

The Semester End Examination shall be conducted with an external examiner and the laboratory teacher. The external examiner shall be appointed from the cluster / other colleges which will be decided by the examination branch of the University.

In the Semester End Examination held for 3 hours, total 60 marks are divided and allocated as shown below:

1. 10 marks for write-up
 2. 15 for experiment/program
 3. 15 for evaluation of results
 4. 10 marks for presentation on another experiment/program in the same laboratory course and
 5. 10 marks for viva-voce on concerned laboratory course.
- The Student, in each subject, shall have to 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 Over all

40% of marks (i.e. 40 marks out of 100 marks) both CIE and SEE marks put together.

The student is eligible to write Semester End Examination of the concerned subject, if the student scores $\geq 35\%$ (14 marks) of 40 Continuous Internal Examination (CIE) marks.

In case, the student appears for Semester End Examination (SEE) of the concerned subject but not scored minimum 35% of CIE marks (14 marks out of 40 internal marks), his performance in that subject in SEE shall stand cancelled inspite of appearing the SEE.

8.4 The evaluation of courses having ONLY internal marks in I Year I Semester and II Year II Semester is as follows:

1. I Year I Semester course (ex., **Elements of CE/ME/EEE/ECE/CSE** etc): The internal evaluation is for 50 marks and it shall take place during I Mid-Term examination and II Mid-Term examination. The average marks of two Mid-Term examinations is the final for 50 marks. Student shall have to earn 40%, i.e 20 marks out of 50 marks from average of the two 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/IT and allied branches and Mining Engineering, the Continuous Internal Evaluation (CIE) will be for 50 marks. Each Mid-Term examination consists of two parts i) **Part – A** for 20 marks, ii) **Part – B** for 20 marks with a total duration of 2 hours.

Part A: Objective/quiz paper is set with multiple choice, fill-in the blanks and match the following type of questions for a total of 20 marks. **Part B:** Descriptive paper shall contain 6 full questions out of which, the student has to answer 4 questions, each carrying 5 marks.

The remaining 10 marks of Continuous Internal Evaluation are for Assignment (5 marks) and Subject Viva-Voce/PPT/Poster Presentation/ Case Study (5 marks) and the evaluation pattern will remain same as for other theory subjects.

For all other branches, the Continuous Internal Evaluation (CIE) will be for 50 marks. Out of the 50 marks for internal evaluation:

- a) A write-up on day-to-day experiment in the laboratory (in terms of aim, components/procedure, expected outcome) which shall be evaluated for 10 marks
- b) **10 marks for viva-voce** (or) tutorial (or) case study (or) application (or) poster presentation of the course concerned.
- c) Internal practical examination conducted by the laboratory teacher concerned shall be evaluated for 15 marks.
- d) The remaining 15 marks are for Laboratory Report/Project and Presentation, which consists of the Design (or) Software / Hardware Model Presentation (or) App Development (or) Prototype Presentation submission which shall be

evaluated after completion of laboratory course and before semester end practical examination.

2. II Year II Semester *Real-Time (or) Field-based Research Project* course: The internal evaluation is for 50 marks and it shall take place during I Mid-Term examination and II Mid-Term examination. The average marks of two Mid-Term examinations is the final for 50 marks. Student shall have to earn 40%, i.e 20 marks out of 50 marks from average of the two 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.

- 8.5 There shall be an Industry training (or) Internship (or) Industry oriented Mini-project (or) Skill Development Courses (or) Paper presentation in reputed journal (or) Industry Oriented Mini Project in collaboration with an industry of their specialization. Students shall register for this immediately after II-Year II Semester Examinations and pursue it during summer vacation/semester break & during III Year without effecting regular course work. Internship at reputed organization (or) Skill development courses (or) Paper presentation in reputed journal (or) Industry Oriented Mini Project shall be submitted in a report form and presented before the committee in III-year II semester before end semester examination. It shall be evaluated for 100 external marks. The committee consists of an External Examiner, Head of the Department, Supervisor of the Industry Oriented Mini Project (or) Internship etc, 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 (or) Industry Oriented Mini Project.
- 8.6 The UG project shall be initiated at the end of the IV Year I Semester and the duration of the project work is one semester. The student must present Project Stage – I during IV Year I Semester before II Mid examinations, in consultation with his Supervisor, the title, objective and plan of action of his Project work to the departmental committee for approval before commencement of IV Year II Semester. Only after obtaining the approval of the departmental committee, the student can start his project work.
- 8.7 UG project work shall be carried out in two stages: Project Stage – I for approval of project before Mid-II examinations in IV Year I Semester and Project Stage – II during IV Year II Semester. Student has to submit project work report at the end of IV Year II Semester. The project shall be evaluated for 100 marks before commencement of SEE Theory examinations.
- 8.8 For Project Stage – I, the departmental committee consisting of Head of the Department, project supervisor and a senior faculty member shall approve the project work to begin before II Mid-Term examination of IV Year I Semester. The student is deemed to be not eligible to register for the 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.

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

- 8.9** For Project Stage – II, the external examiner shall evaluate the project work for 60 marks and the internal project committee shall evaluate it for 40 marks. Out of 40 internal marks, 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 main Project shall be different from the topic already taken. 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 40% marks in the sum total of the CIE and SEE taken together.

For conducting viva-voce of project, University selects an external examiner from the list of experts in the relevant branch submitted by the Principal of the College.

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

- 8.10** A student can re-register for subjects in a semester:

- If the internal marks secured by a student in the Continuous Internal Evaluation marks for 40 (Sum of average of two mid-term examinations consisting of Objective & descriptive parts, Average of two Assignments & Subject Viva-voce/PPT/ Poster presentation/ Case Study on a topic in the concerned subject) are less than 35% and failed in those subjects.

They may seek re-registration for all those subjects registered in that semester in which the student is failed. The student has to re-appear for CIE and SEE as and when offered.

A student must re-register for the failed subject(s) for 40 marks within four weeks of commencement of the classwork in next academic year. His Continuous Internal Evaluation marks for 40 obtained in the previous attempt stand cancelled. The student has to obtain fresh set of marks for 40 allotted for CIE (Sum of average of two mid-term examinations consisting of Objective & descriptive parts, Average of two Assignments & Subject Viva-voce/PPT/ Poster presentation/ Case Study on a topic in the concerned subject). Head of the Dept. will take care of this.

- 8.11** For mandatory courses of Environmental Science, Constitution of India, Intellectual Property Rights, and Gender Sensitization lab, a student has to secure 40 marks out of 100 marks (i.e. 40% of the 100 marks allotted) in the Continuous Internal Evaluation

for passing the subject/course. These marks should also be uploaded along with the internal marks of other subjects.

- 8.12** No marks or letter grades shall be allotted for mandatory/non-credit courses. Only Pass/Fail shall be indicated in Grade Card.

9.0 Grading Procedure

- 9.1** Grades will be awarded to indicate the performance of students in each Theory Subject, Laboratory/Practicals/ Industry-Oriented Mini Project/Internship/SDC and Project Stage. Based on the percentage of marks obtained (Continuous Internal Evaluation plus Semester End Examination, both taken together) as specified in item 8 above, a corresponding letter grade shall be given.
- 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:

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
80 and less than 90%	A⁺ (Excellent)	9
70 and less than 80%	A (Very Good)	8
60 and less than 70%	B⁺ (Good)	7
50 and less than 60%	B (Average)	6
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 shall be deemed to have ‘**failed**’ and is required to reappear as a ‘supplementary student’ in the semester end examination, as and when offered. In such cases, 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 reappear as a ‘supplementary student’ in the semester end examination, as and when offered next. In this case also, the 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, but it indicates only 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. 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) x Credits For a course

- 9.7 A student passes the subject/ course only when **GP ≥ 5** (‘C’ grade or above)
- 9.8 The Semester Grade Point Average (SGPA) is calculated by dividing the sum of credit points (ΣCP) 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

$$SGPA = \{ \sum_{i=1}^N C_i G_i \} / \{ \sum_{i=1}^N C_i \} \dots \text{For each semester,}$$

where ‘i’ is the subject indicator index (considering all subjects in a semester), ‘N’ is the no. of subjects ‘**registered**’ for the semester (as specifically required and listed under the course structure of the parent department), C_i is the no. of credits allotted to the i^{th} subject, and G_i represents the grade points (GP) corresponding to the letter grade awarded for that i^{th} 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 (of 160) 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

$$CGPA = \{ \sum_{j=1}^M C_j G_j \} / \{ \sum_{j=1}^M C_j \} \dots \text{for all S semesters registered}$$

(i.e., up to and inclusive of S semesters, $S \geq 2$),

where ‘M’ is the **total** no. of subjects (as specifically required and listed under the course structure of the parent department) the student has ‘**registered**’ i.e., from the 1st semester onwards up to and inclusive of the 8th semester, ‘j’ is the subject indicator index (takes into account all subjects from 1 to 8 semesters), C_j is the no. of credits allotted to the j^{th} subject, and G_j represents the grade points (GP) corresponding to the letter grade awarded for that j^{th} subject. After registration and completion of I year I semester, the SGPA of that semester itself may be taken as the CGPA, as there are no cumulative effects.

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

$$\text{SGPA} = 152/21 = 7.24$$

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

$$\text{CGPA} = 518/69 = 7.51$$

The calculation process of CGPA illustrated above will be followed for each subsequent semester until 8th semester. The CGPA obtained at the end of 8th semester will become the final CGPA secured for entire B.Tech. programme.

- 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 and CGPA of a semester will be mentioned in the semester Memorandum of Grades if all subjects of that semester are passed in first attempt. Otherwise the SGPA and CGPA shall be mentioned only on the Memorandum of Grades in which sitting he passed his last exam in that semester. However, mandatory courses will not be taken into consideration.

10.0 Passing Standards

- 10.1** A student shall be declared successful or ‘passed’ in a semester, if he secures a GP ≥ 5 (‘C’ grade or above) in every subject/course in that semester (i.e. when the student gets an SGPA ≥ 5.0 at the end of that particular semester); and he shall be declared successful or ‘passed’ in the entire undergraduate programme, only when gets a CGPA ≥ 5.00 (‘C’ grade or above) for the award of the degree as required.
- 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, no. of credits, grade earned, etc.) and credits earned. **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 final percentage of marks equivalent to the computed final CGPA, the following formula may be used.

$$\% \text{ of Marks} = (\text{final CGPA} - 0.5) \times 10$$

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

1. A student is awarded 2-Year UG Diploma Certificate in the concerned engineering branch on completion of all the academic requirements and earned all the 80 credits (within 4 years from the date of admission) upto B.Tech. II Year II Semester, if the student want to exit the 4-Year B.Tech. program and *requests for the 2 -Year B. Tech. (UG) Diploma Certificate.*
2. The student **once opted and awarded 2-Year UG Diploma Certificate, the student will be permitted to join** in B. Tech. III Year I Semester and continue for completion of remaining years of study for 4-Year B. Tech. Degree ONLY in the next academic year along with next batch students. *However, if any student wishes to continue the study after opting for exit, he/she should register for the subjects/courses in III Year I Semester before commencement of classwork for that semester.*
3. *The students, who exit the 4-Year B. Tech. program after II Year of study and wish to re-join the B.Tech. program, must submit the 2 -Year B. Tech. (UG) Diploma Certificate awarded to him, subject to the eligibility for completion of Course/Degree.*
4. A student may be permitted to take one year break after completion of II Year II Semester or B. Tech. III Year II Semester (with university permission through the principal of the college well in advance) and can re-enter the course in **next Academic Year in the same college** and complete the course on fulfilling all the academic credentials within a stipulated duration i.e. double the duration of the course (Ex. within 8 Years for 4-Year program).

13.0 Withholding of results

- 13.1 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.

14.0 Transitory Regulations

A. For students detained due to shortage of attendance:

1. A student who has been detained in any semester of I, 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. within the stipulated period of eight 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:

1. 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 to be suggested by the University.

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 further subjects in R22

Regulations, the College Principals concerned shall conduct remedial classes to cover those subjects/topics for the benefit of the students.

15.0 Student Transfers

- 15.1** There shall be no branch transfers after the completion of admission process.
- 15.2** There shall be no transfers from one college/stream to another within the constituent colleges and units of Jawaharlal Nehru Technological University Hyderabad.
- 15.3** The students seeking transfer to colleges affiliated to JNTUH from various other Universities/institutions have to pass the failed subjects which are equivalent to the subjects of JNTUH, and also pass the subjects of JNTUH which the students have not studied at the earlier institution. Further, though the students have passed some of the subjects at the earlier institutions, if the same subjects are prescribed in different semesters of JNTUH, the students have to study those subjects in JNTUH in spite of the fact that those subjects are repeated.
- 15.4** The transferred students from other Universities/Institutions to JNTUH affiliated colleges who are on rolls are to be provided one chance to write the CBT (for internal marks) in the **equivalent subject(s)** as per the clearance letter issued by the University.
- 15.5** The autonomous affiliated colleges have to provide one chance to write the internal examinations in the **equivalent subject(s)** to the students transferred from other universities/institutions to JNTUH autonomous affiliated colleges who are on rolls, as per the clearance (equivalence) letter issued by the University.

16.0 Scope

- 16.1** The academic regulations should be read as a whole, for the purpose of any interpretation.
- 16.2** In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.
- 16.3** The University 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 University authorities.
- 16.4** Where the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

(Established by State Act No. 30 of 2008)

Kukatpally, Hyderabad, Telangana (India).

ACADEMIC REGULATIONS FOR B.TECH (LATERAL ENTRY SCHEME) FROM THE AY 2023-24

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.

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

3. The students, who fail to fulfil the requirement for the award of the degree in six academic years from the year of admission, shall forfeit their seat in B.Tech.

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

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 takes 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 student takes 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.

Malpractices Rules

Disciplinary Action For / Improper Conduct in Examinations

	Nature of Malpractices/Improper conduct	Punishment
	If the student:	
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 student is appearing but has not made use of (material shall include any marks on the body of the student 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.
(b)	Gives assistance or guidance or receives it from any other student orally or by any other body language methods or communicates through cell phones with any student 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 students 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 student is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student 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 student is to be cancelled and sent to the University.
3.	Impersonates any other student in connection with the examination.	The student who has impersonated shall be expelled from examination hall. The student is also debarred and forfeits the seat. The performance of the original student who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that

		semester/year. The student is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the student 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 student 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 student is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the student 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 or 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 of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of	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 student(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The students 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.

	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.	
7.	Leaves the exam hall taking away answer script or intentionally tears off 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 student 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 student is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.
8.	Possesses 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 student 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 student is also debarred and forfeits the seat.
9.	If student of the college, who is not a student 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.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student 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 student is also debarred and forfeits the seat. Person(s) who do not belong to the college will be handed over to the 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 student has already appeared for 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 student has appeared for 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 University for further action to award a suitable punishment.	

Malpractices identified by squad or special invigilators

1. Punishments to the students as per the above guidelines.
2. Punishment for Institutions: (if the squad reports that the college is also involved in encouraging malpractices)
 - a. A show-cause notice shall be issued to the college.
 - b. Impose a suitable fine on the college.
 - c. Shifting the examination center from one college to another college for a specific period of not less than one year.

* * * * *

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

ACADEMIC CALENDAR 2023-24

B. Tech II YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	19.09.2023	
2	1 st Spell of Instructions (including Dussehra Recess	19.09.2023	25.11.2023 (10 Weeks)
	Dussehra Recess	23.10.2023	28.10.2023 (1 Week)
3	First Mid Term Examinations	28.11.2023	02.12.2023 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	08.12.2023	
5	2 nd Spell of Instructions	04.12.2023	27.01.2024 (8 Weeks)
6	Second Mid Term Examinations	29.01.2024	03.02.2024 (1 Week)
7	Preparation Holidays and Practical Examinations	05.02.2024	09.02.2024 (1 Week)
8	Submission of Second Mid Term Exam Marks to the University on or before	07.02.2024	
9	End Semester Examinations	12.02.2024	24.02.2024 (2 Weeks)

Note: No. of Working / Instructional Days: 90

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	26.02.2024	
2	1 st Spell of Instructions	26.02.2024	29.04.2024 (9 Weeks)
3	First Mid Term Examinations	30.04.2024	04.05.2024 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	10.05.2024	
5	2 nd Spell of Instructions (including Summer Vacation)	06.05.2024	12.07.2024 (10 Weeks)
6	Summer Vacation	13.05.2024	25.05.2024(2 Weeks)
7	Second Mid Term Examinations	15.07.2024	20.07.2024 (1 Week)
8	Preparation Holidays and Practical Examinations	22.07.2024	27.07.2024 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	24.07.2024	
10	End Semester Examinations	29.07.2024	09.08.2024 (2 Weeks)

Note: No. of Working / Instructional Days: 90

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11/9/23

REGISTRAR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

ACADEMIC CALENDAR 2023-24

B. Tech./B. Pharm. III YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	11.10.2023	
2	1 st Spell of Instructions (including Dussehra Recess)	11.10.2023	12.12.2023 (9 Weeks)
3	Dussehra Recess	23.10.2023	28.10.2023 (1 Week)
4	First Mid Term Examinations	13.12.2023	19.12.2023 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	23.12.2023	
6	2 nd Spell of Instructions	20.12.2023	19.02.2024 (8 Weeks)
7	Second Mid Term Examinations	20.02.2024	24.02.2024 (1 Week)
8	Preparation Holidays and Practical Examinations	26.02.2024	02.03.2024 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	28.02.2024	
10	End Semester Examinations	04.03.2024	16.03.2024 (2 Weeks)

Note: No. of Working/ instructional days: 90

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	18.03.2024	
2	1 st Spell of Instructions	18.03.2024	10.05.2024 (8 Weeks)
3	Summer Vacation	13.05.2024	25.05.2024 (2 Weeks)
4	First Mid Term Examinations	27.05.2024	01.06.2024 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	06.06.2024	
6	2 nd Spell of Instructions (including Summer Vacation)	03.06.2024	03.08.2024 (9 Weeks)
7	Second Mid Term Examinations	05.08.2024	09.08.2024 (1 Week)
8	Preparation Holidays and Practical Examinations	12.08.2024	17.08.2024 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	14.08.2024	
10	End Semester Examinations	19.08.2024	31.08.2024 (2 Weeks)

Note: No. of Working/ instructional days: 90


 REGISTRAR I/c.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

Revised ACADEMIC CALENDAR 2023-24

B. Tech./B. Pharm. IV YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	31.07.2023	
2	1 st Spell of Instructions	31.07.2023	30.09.2023 (8 Weeks)
4	First Mid Term Examinations	03.10.2023	07.10.2023 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	13.10.2023	
6	2 nd Spell of Instructions (including Dussehra Recess)	09.10.2023	08.12.2023 (9 Weeks)
7	Dussehra Recess	23.10.2023	28.10.2023 (1 Week)
8	Second Mid Term Examinations	11.12.2023	16.12.2023 (1 Week)
9	Preparation Holidays and Practical Examinations	18.12.2023	23.12.2023 (1 Week)
10	Submission of Second Mid Term Exam Marks to the University on or before	28.12.2023	
11	End Semester Examinations	27.12.2023	10.01.2024 (2 Weeks)

Note: No. of Working/instructional days: 92

II SEM

S.	Description	Duration	
		From	To
1	Commencement of II Semester classwork	12.01.2024	
2	1 st Spell of Instructions	12.01.2024	07.03.2024 (8 Weeks)
3	First Mid Term Examinations	11.03.2024	16.03.2024 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	22.03.2024	
5	2 nd Spell of Instructions	18.03.2024	18.05.2024 (9 Weeks)
6	Second Mid Term Examinations	20.05.2024	25.05.2024 (1 Week)
7	Preparation Holidays and Practical Examinations	27.05.2024	01.06.2024(1 Week)
8	Submission of Second Mid Term Exam Marks to the University on or before	01.06.2024	
9	End Semester Examinations	03.06.2024	15.06.2024 (2 Weeks)

Note: No. of Working/ instructional days: 90


24/7/23
REGISTRAR



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT ACADEMIC CALENDAR (2023-24)

IV B. TECH-I-SEM		DATE: 31-07-2023	
S.No.	EVENT	DATE FROM	DATE TO
1.	Commencement of Class work for IV year	31-07-2023	
2.	Mini Project submission by IV-year students	31-07-2023	12-08-2023
3.	Spell for UNIT – I Instructions for IV year	31-07-2023	19-08-2023
4.	Abstract Review on Project stage-I for IV year	18-08-2023	19-08-2023
5.	Independence Day Holiday	15-08-2023	
6.	Spell for UNIT – II Instructions for IV year	21-08-2023	09-09-2023
7.	Janmashtami Holiday	07-09-2023	
8.	Project stage-I Review-1 for IV year	08-09-2023	09-09-2023
9.	Assignment Test-I on Unit -I for IV year	11-09-2023	15-09-2023
10.	Spell for UNIT – III Instructions for IV year	11-09-2023	30-09-2023
11.	Ganesh Chaturthi Holiday	19-09-2023	
12.	Lab Internal-1 for IV Year	25-09-2023	26-09-2023
13.	Milad un-Nabi Holiday	28-09-2023	
14.	Mahatma Gandhi Jayanti	02-10-2023	
15.	University Mid-I Exams for IV Year	03-10-2023	07-10-2023
16.	Project stage-I Review-2 for IV year	09-10-2023	04-12-2023
17.	Spell for UNIT – IV Instructions for IV year	09-10-2023	04-11-2023
18.	Submission of Mid-I exam marks to the university on or before IV Year	13-10-2023	



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S.No.	EVENT	DATE FROM	DATE TO
19.	Dussehra recess for IV year	23-10-2023	28-10-2023
20.	Spell for UNIT – V Instructions for IV year	06-11-2023	25-11-2023
21.	Assignment Test-II on III & IV Units for IV year	20-11-2023	24-11-2023
22.	Diwali Holiday	12-11-2023	
23.	Prefinal Exams for IV year	27-11-2023	01-12-2023
24.	Project Stage-I Final submission for IV year	27-11-2023	09-12-2023
25.	Lab Internal-2 for IV Year	04-12-2023	05-12-2023
26.	University II-Mid-Exams for IV Year	11-12-2023	16-12-2023
27.	Preparation Holidays and Practical Examinations for IV year	18-12-2023	23-12-2023
28.	Christmas Holiday	25-12-2023	
29.	Submission of Mid-II exam marks to the university on or before for IV year	28-12-2023	
30.	End Semester Examination for IV year	27-12-2023	10-01-2024

Tentative Dates for Events

S.No.	EVENT	DATE
1.	Workshop for IV year	Second Week of November
2.	Seminar for IV year	Second Week of September
3.	Industrial visit for IV year	Third Week of September
4.	ADDON Courses for IV Year	Fourth Week of August


Head of the Department
Electronics and Communication Engineering
Vignans Institute of Management & Technology
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D)



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DEPARTMENT ACADEMIC CALENDAR (2023-24)

II B. TECH-II-SEM		DATE: 20-02-2024	
S.No.	EVENT	DATE FROM	DATE TO
1.	Commencement of Class work for II year	26-02-2024	
2.	Spell for UNIT – I Instructions for II year	26-02-2024	16-03-2024
3.	Maha Shivaratri Holiday	08-03-2024	
4.	Spell for UNIT – II Instructions for II year	18-03-2024	06-04-2024
5.	Holi Holiday	25-03-2024	
6.	Assignment Test-I on Unit -I for II year	26-03-2024	01-04-2024
7.	Good Friday Holiday	29-03-2024	
8.	Spell for UNIT – III Instructions for II year	08-04-2024	27-04-2024
9.	Ugadi Holiday	09-04-2024	
10.	Ramzan holiday	11-04-2024	
11.	Sri Rama Navami Holiday	17-04-2024	
12.	Lab Internal-1 for II Year	22-04-2024	27-04-2024
13.	University Mid-I Exams for II Year	30-04-2024	04-05-2024
14.	Spell for UNIT – IV Instructions for II years	06-05-2024	08-06-2024
15.	Submission of Mid-I exam marks to the university on or before for II year	10-05-2024	
16.	Summer Vacation	13-05-2024	25-05-2024
17.	Spell for UNIT – V Instructions for II years	10-06-2024	29-06-2024
18.	Bakrid Holiday	17-06-2024	
19.	Assignment Test-II on III & IV Units for II year	18-06-2024	22-06-2024



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S.No.	EVENT	DATE FROM	DATE TO
20.	Lab Internal-2 for II Year	01-07-2024	06-07-2024
21.	Prefinal Examination	08-07-2024	13-07-2024
22.	University Mid-I Exams for II Year	15-07-2024	20-07-2024
23.	Muharram Holiday	17-07-2024	
24.	Preparation Holidays and Practical Examinations for II year	22-07-2024	27-07-2024
25.	Submission of Mid-II exam marks to the university on or before for II year	24-07-2024	
26.	End Semester Examination for II year	29-07-2024	09-08-2024

Tentative Dates for Events

S.No.	EVENT	DATE
1.	Workshop for II Year	First Week of April
2.	Seminar for II Year	Second Week of May
3.	Industrial visit for II Year	Second Week of March
4.	ADDON Courses for II Year	First Week of April


Head of the Department
Electronics and Communication Engineering
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt.)-501301

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY, HYDERABAD – 500085

EXAMINATION BRANCH

I YEAR B.TECH II SEMESTER – R22 REGULATIONS I - MID TERM EXAMINATIONS APRIL-2024

T I M E T A B L E

TIMINGS → FN: 09.30 AM TO 11.30AM AN: 01.00 AM TO 03.00 PM

BRANCH	DATE AND DAY			
	15-04-2024-FN MONDAY	15-04-2024-AN MONDAY	16-04-2024-FN TUESDAY	16-04-2024-AN TUESDAY
ELECTRONICS & COMMUNICATIONS ENGINEERING (04- ECE)	Ordinary Differential Equations and Vector Calculus	Electronic Devices and Circuits	Engineering Chemistry	Basic Electrical Engineering
COMPUTER SCIENCE & ENGINEERING (05- CSE)	Ordinary Differential Equations and Vector Calculus	Electronic Devices and Circuits	Applied Physics	English for Skill Enhancement
INFORMATION TECHNOLOGY (12- IT)	Ordinary Differential Equations and Vector Calculus	Electronic Devices and Circuits	Applied Physics	English for Skill Enhancement
COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING) (66-CSE(AI&ML))	Ordinary Differential Equations and Vector Calculus	Electronic Devices and Circuits	Engineering Chemistry	Basic Electrical Engineering
COMPUTER SCIENCE AND ENGINEERING (DATASCIENCE) (67-CSE(DS))	Ordinary Differential Equations and Vector Calculus	Electronic Devices and Circuits	Applied Physics	English for Skill Enhancement

PRINCIPAL

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY, HYDERABAD – 500085

EXAMINATION BRANCH ECEM

II YEAR B.TECH I SEMESTER – R22 REGULATIONS II - MID TERM EXAMINATIONS January-2024

T I M E T A B L E

TIME → FN: 09:30 AM to 11:30 AM

AN: 01:00 PM to 03:00PM

BRANCH	DATE AND DAY				
	29-01-2024 Monday	29-01-2024 Monday	30-01-2024 Tuesday	30-01-2024 Tuesday	31-01-2024 Wednesday
ELECTRONICS & COMMUNICATIONS ENGINEERING (04- ECE)	Signals & Systems	Analog Circuits	Digital Logic Design	Numerical Methods and Complex Variables	Network Analysis and Synthesis
COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING) (66-CSE(AI&ML))	Mathematical and Statistical Foundations	Data Structures	Computer Organization and Architecture	Software Engineering	Operating Systems
ARTIFICIAL INTELLIGENCE AND DATA SCIENCE (72- AI&DS)	Mathematical and Statistical Foundations	Data Structures	Computer Organization and Architecture	Digital Electronics	Object Oriented Programming through Java
COMPUTER SCIENCE & ENGINEERING (05- CSE)	Digital Electronics	Data Structures	Computer Organization and Architecture	Computer Oriented Statistical Methods	Object Oriented Programming through Java
INFORMATION TECHNOLOGY (12- IT)	Digital Electronics	Data Structures	Computer Organization and Microprocessor	Computer Oriented Statistical Methods	Introduction to IoT
COMPUTER SCIENCE AND ENGINEERING (DATASCIENCE) (67-CSE(DS))	Digital Electronics	Data Structures	Computer Organization and Architecture	Computer Oriented Statistical Methods	Object Oriented Programming through Java

PRINCIPAL

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KUKATPALLY, HYDERABAD – 500085

EXAMINATION BRANCH

III YEAR B.TECH I SEMESTER – R18 REGULATIONS I - MID TERM EXAMINATIONS DECEMBER-2023 TIME TABLE

TIME → FN: 09:40 AM to 11:00 AM

AN: 01:40 PM to 03:00PM

BRANCH	DATE AND DAY					
	14-12-2023 Thursday	14-12-2023 Thursday	15-12-2023 Friday	15-12-2023 Friday	16-12-2023 Saturday	16-12-2023 Saturday
ELECTRONICS & COMMUNICATIONS ENGINEERING (04- ECE)	Microprocessors & Microcontrollers	Data Communications and Networks	Control Systems	Business Economics & Financial Analysis	Computer Organization And Operating Systems	-
COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING) (66-CSE(AI&ML))	Design and Analysis of Algorithms	Compiler Design	Computer Networks	Web Programming	Machine Learning	Software Testing Methodologies
ARTIFICIAL INTELLIGENCE AND DATA SCIENCE (72- AI&DS)	Design and Analysis of Algorithms	Software Engineering	Big Data Technologies	Scripting Languages	Machine Learning	Software Testing Methodologies
COMPUTER SCIENCE & ENGINEERING (05- CSE)	Formal Languages & Automata Theory	Software Engineering	Computer Networks	Web Technologies	Information Retrieval System	Principles Of Programming Language
INFORMATION TECHNOLOGY (12- IT)	Formal Languages & Automata Theory	Software Engineering	Data Communication & Computer Networks	Web Programming	Machine Learning	Principles Of Programming Language
COMPUTER SCIENCE AND ENGINEERING (DATASCIENCE) (67-CSE(DS))	Design and Analysis of Algorithms	Introduction To Data Science	Computer Networks	Web Programming	Software Process & Project Management	Data Mining

PRINCIPAL

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY - HYDERABAD – 500085

EXAMINATION BRANCH

IV YEAR B.TECH –II SEMESTER – R18 REGULATION - II MID TERM EXAMINATIONS May-2024

TIME → FN: 9.40 AM TO 11.00 AM (DESCRIPTIVE EXAM: 9.40 AM TO 10.40 AM, OBJECTIVE EXAM: 10.40 AM TO 11.00 AM)

AN: 1.40 PM TO 03.00 PM (DESCRIPTIVE EXAM: 1.40 PM TO 2.40 PM, OBJECTIVE EXAM: 2.40 PM TO 03.00 PM)

BRANCH	DATE, SESSION AND DAY		
	22-05-2024 Wednesday FN	22-05-2024 Wednesday AN	23-05-2024 Thursday FN
ELECTRONICS & COMMUNICATIONS ENGINEERING (04- ECE)	Radar Systems	System On Chip Architecture	Total Quality Management
COMPUTER SCIENCE & ENGINEERING (05- CSE)	Organizational Behaviour	Human Computer Interaction	Total Quality Management
INFORMATION TECHNOLOGY (12-IT)	Organizational Behaviour	Human Computer Interaction	Total Quality Management
COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING) (66-CSE(AI&ML)	Organizational Behaviour	Seamantic Web	Total Quality Management

PRINCIPAL



II B.Tech I Semester(R22) I-Mid Examinations, November-2023

Roll Number									
-------------	--	--	--	--	--	--	--	--	--

SET-2

Branch & Sections: II ECE

Date: 12.12.2023 (FN)

Sub: NM&CV

Max. Marks: 20M

Name of the Faculty: V MADHUKAR

Time: 120mins

Answer all Questions Part-A							20x0.5=10	
1	Conditions for expansion of a function in Fourier series are known as						[]	
	A	Dirichlet's	B	Eulers	C	LeGrange's	D	Cauchy s
2	If $f(x)=x^3$ in $(-1, 1)$ then $a_n =$						[]	
	A	0	B	1	C	-1	D	none
3	The order of convergence in Newton – Raphson method is -----						[]	
	A	1	B	2	C	3	D	4
4	$\Delta[f(x)] =$ -----						[]	
	A	$f(x-h) + f(x)$	B	$f(x-h)-f(x)$	C	$f(x+h) -f(x)$	D	$f(x+h) +f(x)$
5	If $x^3 - x - 4 = 0$, by Bisection method first two approximations x_0 and x_1 are 1 and 2 then x_2 is -----						[]	
	A	1.5	B	1.75	C	1.25	D	1.65
6	If first two approximations x_0 and x_1 are roots of $x^3 - x^2 + 1 = 0$ are 1 and 2 then x_2 by Regula Falsi method is -----						[]	
	A	1.5	B	1.75	C	1.25	D	1.65
7	The vale of $\int_0^1 \frac{1}{x+1} dx$ Simpson's $\frac{1}{3}$ rule ($h=0.5$)is _____						[]	
	A	0.6954	B	0.6945	C	0.6455	D	0.9457
8	Which of the following is a step-by-step method						[]	
	A	Taylor's series	B	Picard's	C	Adams Bashforth	D	none
9	$\Delta(e^x) =$ ----- taken $h = 1$						[]	
	A	$(e+1)(e^x)$	B	$(1-e)(e^x)$	C	$(1-e)(e^{-x})$	D	$(e-1)(e^x)$
10	$\int_1^2 (x^3 + 1) dx$ by Trapezoidal rule ($h=.25$) _____						[]	
	A	0.788	B	0.588	C	0.888	D	0.688



Fill in the Blanks	10x0.5=5
11. What is the order of convergence of the method of successive approximations?	
12. The relation between E and ∇ is ----	
13. If $\mu_0 = 1, \mu_1 = 5, \mu_2 = 8, \mu_3 = 3, \mu_4 = 7, \mu_5 = 0$ then $\Delta^5 \mu_6 =$ -----	
14. The n^{th} difference of a polynomial of degree n is _____	
15. Write Simpson one third rule _____	
16. Fourier series expansion of an even function in $(-c, c)$ has only _____ terms	
17. Fourier series for $f(x) = x^2$ in $(-\pi, \pi)$ is _____	
18. What is the condition for the convergence of successive approximation method? -----	
19. While evaluating a definite integral by trapezoidal rule the accuracy can be increased by taking _____ number of subintervals.	
20. The value of $\int_1^2 \frac{e^x}{x} dx$ by Simpson's $\frac{1}{3}$ rule (n=4) is _____	

Part-B		4x10=40																
Answer Any Four Questions of the following																		
Sl. No.	Question	CO Mapping	Blooms Taxonomy Level	Marks														
1	Expand the function $f(x) = x^3$ Fourier series in $-\pi < x < \pi$	CO1	1,4	10														
2	Find the Fourier series expansion of $f(x) = x \cos x$ $0 < x < 2\pi$	CO1	1	10														
3	Find the root of the equation $x^3 - x - 4 = 0$ by using bisection method.	CO2	3	10														
4	Given that $y(3) = 6, y(5) = 24, y(7) = 58, y(9) = 108, y(11) = 174$ find x when $y = 100$ using Lagrange's formula.	CO2	1,4	10														
5	Interpolate by means of Gauss backward formula the population of a town for the year 1974, given that <table border="1" style="margin: 5px auto; border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 5px;">Year:</td> <td style="padding: 5px;">1939</td> <td style="padding: 5px;">1949</td> <td style="padding: 5px;">1959</td> <td style="padding: 5px;">1969</td> <td style="padding: 5px;">1979</td> <td style="padding: 5px;">1989</td> </tr> <tr> <td style="padding: 5px;">Population in thousand</td> <td style="padding: 5px;">12</td> <td style="padding: 5px;">15</td> <td style="padding: 5px;">20</td> <td style="padding: 5px;">27</td> <td style="padding: 5px;">39</td> <td style="padding: 5px;">52</td> </tr> </table>	Year:	1939	1949	1959	1969	1979	1989	Population in thousand	12	15	20	27	39	52	CO2	1,4	10
Year:	1939	1949	1959	1969	1979	1989												
Population in thousand	12	15	20	27	39	52												
6	Evaluate $\int_1^3 e^x dx$ using (i) Trapezoidal rule (ii) Simpson's one-third rule (iii) Simpson's 3/8 rule.	CO3	6	10														



VIGNAN'S INSTITUTE OF MANAGEMENT & TECHNOLOGY FOR WOMEN

Kondapur Vill, Ghatkesar Mandal, Medchal (Dist.) - 501301.

B. Tech. Internal Examination Answer Booklet



Sl.No. **5573**

Student Name	Kasi Reddy Poojitha			Year & Semester	III - II
Hall Ticket No.	210P/A1223	Branch	IT	Mid	II
Subject Name	IES			Date of Exam	06/8/24

K. Poojitha
Signature of the Student

[Signature]
Signature of the Invigilator

Objective Total	Q. No.	1	2	3	4	5	6	Descriptive Total	Marks Obtained
<i>92</i>	a		<i>9</i>					<i>17</i>	<i>18</i>
	b				<i>8</i>				<i>20</i>
	Total		<i>9</i>		<i>8</i>			<i>8.5</i>	Maximum Marks

Name & Signature of the Examiner

Signature of the Student

PART-B

1. *B*
2. *A*
3. *D*
4. *D*
5. *B*
6. *A*
7. *B*
8. *C*

9.

~~D~~

10.

~~A~~

PART-C

11.

~~Embedded~~

12.

~~Compilation~~

13.

~~Register~~

14.

~~const~~

15.

~~multitasking~~

16.

~~Kernal~~

17.

~~multiprocessing~~

18.

~~Simulator~~

19.

~~Emulator~~

20.

~~Target software~~

PART-A

2.

Multiprocessing:

It can be connected to more than one user for completion of the task, collectively it can complete the task is known as multiprocessing.

multiprocessing has more than one user for completion of the task.

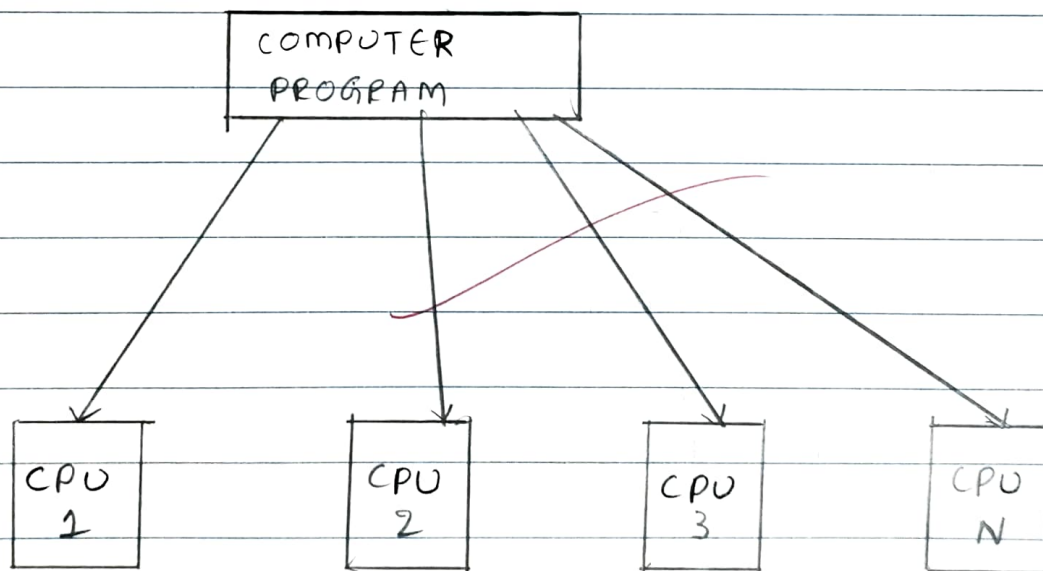
It can be classified into two types:

1. Symmetric multiprocessing
2. Asymmetric multiprocessing

Symmetric multiprocessing: In Symmetric multiprocessing one can execute with the residing process and other with the user program

Asymmetric Multiprocessing: In Asymmetric multiprocessing it can execute with the available user and other can be simultaneously with the user program.

It can be represented as



- * It has ^{more} more than one CPU
- * multiprocessing has more than one user
- * It can be executed more than one processor at a time

* It takes less time for execution

* It is less efficient

* Through^{put} is maximum

* categories: Symmetric & Asymmetric

* Efficiency is maximum

Multitasking:

When Embedded Systems is not developed one user can execute one job or one task at a time, but these days as technology improved, efficiency improved one can execute more than one job or task at a time.

Executes more than one is known as multitasking.

Execution is done by the CPU by the switching between them.

It has two types:

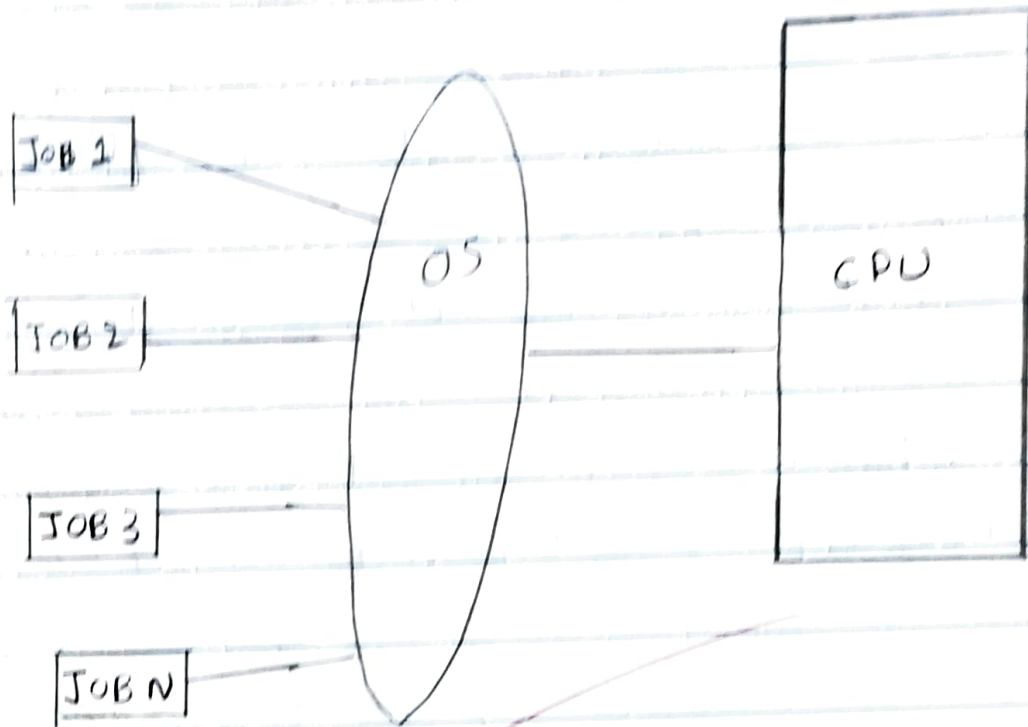
* Single user multitasking

* multi user multitasking

* It has one CPU

* multitasking has more than one users.

* It can execute one by one.



* It takes moderate time.

* Efficiency is moderate.

* Throughput is moderate.

* Categories: single user or multiuser.

4)

Emulators:

* Emulators is a firmware embedded systems for emulating the systems.

* It is a combination of software and hardware.

* It is a hardware, processes like a memory, instructions like a processes but it is not a processes.

* Emulators are used to replicate the hardware environment for debugging purposes.

* Software environment can be replaced with the hardware environment.

* It is a reverse engineering process of the embedded systems.

* Especially it needs the hardware for the debugging purposes.

* It is a specially debugging process of all compared to others.

* It requires not only a hardware but also the combination of both software and hardware.

* Emulators are efficient compared to simulators and all the processes.

Simulators:

* In simulator it doesn't need the hardware.

* Simulators are used to test and debug embedded systems without the need for physical hardware.

Features:

- It is purely software based
- very primitive
- Doesn't require the target process
- Lack of real time behaviour

It does not require target process:

Simulators does not require the target process for debugging purposes.

Simulated I/O peripherals:

Inputs and outputs of the peripherals are simulated easily by the debugging process.

simulated abnormal conditions:

It takes less time and efficiently it can simulate the abnormal conditions.



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
HYDERABAD-500085**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN(UP)
B.Tech - R22 - II Year - II Semester
ELECTRONICS AND COMMUNICATION ENGINEERING

Final University Consolidated Internal Marks Report-Date- 2024-07-29 15.28.54

HTNO	18403	18412	18420	18435	18437	184AC	184AX	184AY	184BN	184CE
22UP1A0401	37	39	37	98	47	36	34	39	36	30
22UP1A0402	33	36	37	90	41	31	36	38	31	32
22UP1A0403	34	38	36	94	44	33	38	38	36	34
22UP1A0404	37	40	35	97	46	37	37	39	37	34
22UP1A0405	32	37	35	90	47	32	35	38	36	34
22UP1A0406	37	38	37	91	41	34	35	40	37	36
22UP1A0407	38	39	37	92	47	34	35	37	36	33
22UP1A0408	35	39	37	96	43	37	36	39	38	32
22UP1A0409	40	40	40	97	48	38	38	40	38	38
22UP1A0410	36	35	36	92	41	33	29	35	32	29
22UP1A0411	31	35	35	93	43	29	29	31	27	29
22UP1A0412	37	39	37	95	48	31	29	35	34	23
22UP1A0413	35	36	38	92	44	35	38	39	38	36
22UP1A0414	39	40	40	92	43	36	37	38	37	35
22UP1A0415	33	36	36	92	47	29	29	38	32	31
22UP1A0416	40	40	40	92	49	38	40	40	39	40
22UP1A0417	32	36	35	99	44	29	36	40	33	32
22UP1A0418	37	36	36	90	41	30	32	31	33	28
22UP1A0419	36	39	37	92	42	33	36	39	37	35
22UP1A0420	31	38	36	90	45	30	33	36	31	34
22UP1A0421	37	36	38	95	42	31	29	36	36	30
22UP1A0422	38	39	39	94	48	34	37	39	36	34
22UP1A0423	38	38	37	94	45	33	33	39	35	34
22UP1A0424	31	34	35	94	43	27	27	30	30	33
22UP1A0425	38	34	38	97	47	35	33	37	37	30
22UP1A0426	32	35	36	91	44	30	31	32	30	30
22UP1A0427	37	35	38	91	47	32	35	37	34	32
22UP1A0428	38	39	36	95	42	37	37	40	38	37
22UP1A0429	31	37	36	96	48	28	31	34	31	26
22UP1A0430	36	38	36	95	46	30	30	34	29	26
22UP1A0431	38	40	38	98	42	31	33	38	36	30
22UP1A0432	32	36	36	97	41	32	30	38	34	30

HTNO	18403	18412	18420	18435	18437	184AC	184AX	184AY	184BN	184CE
22UP1A0433	37	35	36	93	39	29	29	30	29	25
22UP1A0435	36	36	35	91	41	30	27	38	30	28
22UP1A0436	35	30	37	90	42	27	29	26	28	25
22UP1A0437	31	36	35	90	44	28	31	30	27	26
22UP1A0438	38	39	37	98	45	36	36	39	37	36
22UP1A0439	32	36	37	92	45	27	26	32	29	21
22UP1A0440	32	35	37	92	42	31	34	35	34	31
22UP1A0441	40	40	38	91	46	34	35	38	37	38
22UP1A0442	31	38	36	98	47	31	32	36	31	31
22UP1A0443	32	35	38	98	44	27	33	38	32	34
22UP1A0444	34	37	37	90	43	36	38	39	37	37
22UP1A0445	40	40	39	91	48	34	36	39	33	37
22UP1A0446	38	39	39	96	48	31	34	36	36	37
22UP1A0447	31	36	35	93	41	29	28	30	28	32
22UP1A0448	-1	-1	-1	-1	25	13	11	15	12	14
22UP1A0449	30	35	35	92	40	26	28	27	27	20
22UP1A0450	31	35	36	96	40	28	27	31	31	23
22UP1A0451	32	36	37	94	43	32	33	38	33	33
22UP1A0452	31	37	36	95	43	26	26	28	28	23
22UP1A0453	33	37	38	97	49	33	34	37	34	31
22UP1A0454	34	37	38	92	41	33	31	37	35	28
22UP1A0455	39	38	36	99	43	37	36	38	38	32
22UP1A0456	32	32	36	90	42	28	25	28	30	18
22UP1A0457	40	39	39	91	49	36	37	36	39	37
22UP1A0458	31	36	37	90	42	28	27	26	30	22
23UP5A0401	33	38	39	94	44	36	34	39	39	33
23UP5A0402	32	38	36	94	44	32	33	38	38	30
23UP5A0403	39	40	39	98	48	32	33	36	37	32
23UP5A0404	37	38	36	95	44	30	32	37	36	33
23UP5A0405	34	38	36	90	48	29	34	37	38	32
23UP5A0406	38	39	37	91	42	34	32	37	36	33
23UP5A0407	38	38	38	90	48	33	36	38	38	30
23UP5A0408	39	38	38	90	48	30	31	34	37	27
23UP5A0409	40	40	36	91	47	36	36	37	39	30
23UP5A0410	37	38	36	93	43	35	32	39	37	34
23UP5A0411	37	38	37	93	49	33	31	38	38	29
Total:68	236 0	249 4	247 2	625 9	300 3	215 5	220 5	242 1	230 2	208 9

Note : '-1' indicates student is absent for the exam.

Subject Code	Subject Name
18412	ELECTRONIC CIRCUIT ANALYSIS LABORATORY

184AC	ANALOG AND DIGITAL COMMUNICATIONS
184CE	PROBABILITY THEORY AND STOCHASTIC PROCESSES
18435	GENDER SENSITIZATION LAB
184BN	LINEAR AND DIGITAL IC APPLICATIONS
18420	LINEAR AND DIGITAL IC APPLICATIONS LABORATORY
184AX	ELECTROMAGNETIC FIELDS AND TRANSMISSION LINES
184AY	ELECTRONIC CIRCUIT ANALYSIS
18403	ANALOG AND DIGITAL COMMUNICATIONS LABORATORY
18437	REAL TIME PROJECT/ FIELD BASED PROJECT

Signature Of Principal with Date & Office seal

DEPARTMENT OF

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An ISO 9001 : 2000 Certified Institution)

(Approved by AICTE, Affiliated to J.N.T. University, Hyderabad)

Kondapur Village, Gatkesar Mandal, Ranga Reddy District - 501 301.

Phone : 08415 - 200006 / 07 / 08 / 09



Certificate

Certified that this is the bonafide record of the work done by

(name) Mr./Ms. Alladi. Pravalika Yadav of

Year III Semester 1 Hall Ticket No. 22UP5A0401

in Microprocessors And Microcontrollers Laboratory during the

Year 2023 - 2024

Faculty In-charge Lab

Date : 15/02/2024

External Examiner

Head of the Department

Head of the Department
Electronics and Communication
Vignan's Institute of Management and Technology for Women
Kondapur (V), Gatkesar (M), Ranga Reddy (D), Hyderabad (T)

INDEX

Exp. No.	Name of Experiment	Page	Faculty	
			Sub. Date	Signature
1.	Arithmetic, Logical and String operations of 8086	1-16	24/11/23	
2.	Bit level logical operations, Rotate, Shift, and swap operations of 8086 microprocessor	17-24	8/12/23	
3.	Arithmetic, logical, Rotate and Swap operations of 8051 microcontroller	25-30	15/12/23	
4.	Time Delay Generation using Timers of 8051	31-32	22/12/23	M. K. Patel
5.	Serial communication from I/O devices to 8051 Microcontroller.	33-34	29/12/23	M. K. Patel
6.	Square wave Generation using timer 0 with Port 2	35-36	5/1/24	
7.	7 Segment Display to 8051	37-38	19/1/24	
8.	Triangular Wave Generator through DAC interfaces to 8051	39-42	2/2/24	
9.	Interface Matrix Keypad to 8051	43-50	9/2/24	
10.	Sequence Generator Using Serial Interface in 8051.	51-56	15/2/24	
11.	8-bit ADC Interface to 8051	57-60	15/2/24	
12.				
13.				
14.				
15.				

EVALUATION SHEET Contd.,

Exp. No.	Experiment Title	Date	A	B	C	D	Total <small>T=[A+B+C+D]</small>	Faculty Sign
			2	3	4	6		
22.								
23.								
24.								
25.								
26.								
27.								
28.								
29.								
30.								

Evaluation For MID-1 : Day-Day Lab Evaluation (Maximum Marks) : 15, Lab internal (Maximum Marks) : 10

Serial Nos. of Experiments Conducted during MID - 1

From Sl. No. (F1) 1

End Sl. No. (E1) 5

Total Lab Evaluation till Mid -1 (ΣT) 75

Average Marks $M1 = [\Sigma T / (E1-F1+1)]$ 15

Internal Examination-1 (N1) 60

MID-1 Marks (M1+N1) 25

Final MID-1 Marks (in words) Twenty five

Evaluation For MID-2 : Day-Day Lab Evaluation (Maximum Marks) : 15, Lab internal (Maximum Marks) : 10

Serial Nos. of Experiments Conducted during MID - 2

From Sl. No. (F2) 6

End Sl. No. (E2) 11

Total Lab Evaluation till Mid -2 (ΣT) 90

Average Marks $M1 = [\Sigma T / (E2-F2+1)]$ 75

Internal Examination-2 (N2) 60

MID-2 Marks (M2+N2) 25

Final MID-2 Marks (in words) Twenty five

Faculty-in-Charge :

Date : 15/02/2024

Head of the Department :

Date :



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: **B.TECH IV YEAR II SEM**

A.Y: **2023-2024**

CLASS: **IV ECE - A**

Date: **25-03-2024**

PROJECT STAGE - II REVIEW MARKS

INTERNAL EVALUATION MARKS SHEET

S.No	Batch No	Roll No	Student Name	Project Title Name	Guide Name	PRC-I	PRC-II	PRC-III	AVERAGE
1	MJ20-A1	20UP1A0403	B. Vedakshari	IOT Based Smart-Helmet For Underground Mines	Mrs. D. Shirisha	24	22	23	23
		20UP1A0401	Alagala Shivani			22	24	23	23
		20UP1A0412	Challamalla Kaveri			22	22	24	23
2	MJ20-A2	21UP5A0403	Ashwitha Burla	A Low-Power True Single Phase Clocked (TSPC) Full-Adder	Mr. J. Sunil Kumar	25	25	25	25
		21UP5A0413	Machani Manasa			23	24	23	24
		21UP5A0410	Gannoju Ojasvi			22	23	24	23
3	MJ20-A3	20UP1A0424	Konda Alekhya	CNN- based object recognition and tracking system for visually impaired people	Dr. Vijaykumar R Urkude	23	24	25	24
		19UP1A0435	Sugguna Likhita			22	24	23	23
		20UP1A0406	Bakaram Sravanthi			22	24	23	23
		20UP1A0411	Borra Divya Sree			25	24	23	24
4	MJ20-A4	20UP1A0418	Gundra Yashaswi	The implementation of missing people identification using machine learning and raspberry pi	Mrs. G. Swathi	23	23	25	24
		21UP5A0409	Emudaboina Nandini			23	25	24	24
		21UP5A0406	Cheera Navya			23	22	24	23
5	MJ20-A5	20UP1A0423	Kommineni Sindhu	IoT Based smart door bell with raspberry pi	Mr. K. Ashok Reddy	25	25	25	25
		20UP1A0409	Barla Pujitha			22	24	23	23
		20UP1A0421	Koduru Sandhya			22	25	25	24
6	MJ20-A6	20UP1A0402	Annam Alekhya	protecting women with instant location alert	Mr. D. Naresh	23	25	24	24
		20PQ1A0426	K. Lahari			22	25	25	24
		20UP1A0405	Bademalke Afrozjaha			22	24	23	23

7	MJ20-A7	20UP1A0414	Dasari Akhila	Transmission gate-based 9T SRAM cell for variation resilient low power and reliable internet of things applications	Dr. SK. Masthan Basha	25	24	24	24
		21UP5A0401	Adepu Swarnrekha			24	25	23	24
		20UP1A0420	Kamatam Manasa			23	22	24	23
8	MJ20-A8	20UP1A0407	Bandari Vardhana	Automatic pet food dispenser	Mr. M. Karthikpal	25	25	25	25
		21UP5A0405	C Gayathri			22	24	23	23
		20UP1A0408	B. Dinitha Sri			22	23	24	23
9	MJ20-A9	20UP1A0416	Guduru Nikisha	A machine learning model for Autism prediction in toddlers	Ms. K. Padmaleela	25	22	23	23
		20UP1A0410	B. Laxmi Prasanna			24	25	23	24
		20UP1A0413	Dandem Bhumika			23	23	23	23
10	MJ20-A10	21UP5A0407	Donkeshwar Madhuri	TG-SPP- A One transmission gate short path padding for wide voltage resilient circuits	Mr. T. Pullaiah	25	23	24	24
		21UP5A0411	Giddala Bhargavi			22	25	24	24
		21UP5A0408	Dulam Manasa			21	24	23	23
11	MJ20-A11	21UP5A0404	Bethi Sahithi	Restaurant management system	Mr. G. Ganesh Reddy	25	24	23	24
		21UP5A0414	Nagapuri Nandini			21	24	23	23
		21UP5A0402	Ankinapalli Mamatha			22	24	23	23
12	MJ20-A12	20UP1A0417	Gujjula Anjali	Smart Garden Monitoring System Using IoT	Mr. E. Nagaraju	25	23	24	24
		20UP1A0415	E. Prathusha			22	25	24	24
		20UP1A0404	B. Keerthy Reddy			22	24	23	23

Project Coordinator for ECE-B

HOD-ECE



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: **B.TECH IV YEAR II SEM**

A.Y: 2023-2024

CLASS: **ECE-B**

Date: 25-03-2024

PROJECT STAGE - II AVERAGE MARKS

INTERNAL EVALUATION MARKS SHEET

S.No	Batch No	Roll No	Student Name	Project Title Name	Guide Name	PRC-I	PRC-II	PRC-III	AVG
1	MJ20-B1	20UP1A0428	Mettu Pranitha	Reading aid and Translator using raspberry pi for Blind people	Mr. T. Pullaiah	25	25	24	25
		20UP1A0439	Tekula Harshavardhini			24	24	25	24
		20UP1A0433	Ponugoti Sindhu			25	24	25	25
2	MJ20-B2	20UP1A0435	Pulla Srivani	Face recognition based door unlocking using Raspberry pi and machine learning	Mrs. G. Swathi	23	24	23	23
		20UP1A0446	Yarram Vinitha Reddy			23	23	24	23
		20UP1A0443	Voleti Chandana			25	24	25	25
		20UP1A0429	Muddam Sri Varsha Reddy			23	25	23	24
3	MJ20-B3	21UP5A0418	Paidimarry Harinisudha	Design of 8 bit Reconfigurable ALU using Quantum Dot Cellular Automata	Mr. J. Sunil Kumar	24	23	23	23
		20UP1A0432	Pasunuri Shiva Priya Rao			23	24	24	24
		21UP5A0423	Relangi Hemalatha			23	25	25	24
4	MJ20-B4	20UP1A0438	Sivakavi Mounika Devi	Zone Aware Vehicle Safety System with adaptive Speed and Headlight Control using Raspberry Pi	Mr. M. Karthikpal	24	25	24	24
		20UP1A0434	Puli Satyalavanya			24	23	23	23
		20UP1A0442	Velagala Renuka			23	23	25	24
5	MJ20-B5	21UP5A0428	Vungarala Pooja Priya	Fire and Gas Detection with mail alert using esp32	Mr. K. Ashok Reddy	23	24	23	23
		20UP1A0440	Thatikonda Ramya Sri			25	24	25	25
		20UP1A0437	Sikhakollu Bhavya			23	23	24	23
6	MJ20-B6	20UP1A0441	Valabhoju Manasa	Smart vacuum cleaner using solar panel	Mr. P. Hari Krishna	25	25	25	25
		21UP5A0419	Peddabala Anuja			22	24	24	23
		21UP5A0422	Ramidi Nikitha			25	24	24	24

7	MJ20-B7	21UP5A0417	Padala Ratna Kumari	Design a Novel microstrip patch antenna using HFSS	Mr. E. Nagaraju	25	25	25	25
		21UP5A0424	S Nandini			23	22	24	23
		20UP1A0427	Mattepu Gowri Lakshmi			22	23	25	23
		21UP5A0421	R Sai Shivani Bai			23	23	24	23
8	MJ20-B8	20UP1A0431	P. Amulya	Hardware implementation of token display system using thermal printer	Mrs. G. Indira Priya Darshini	23	25	24	24
		21UP5A0426	Seelam Kavya			23	23	24	23
		21UP5A0415	Odnala Architha			22	24	24	23
		21UP5A0425	Sandena Omsri			24	23	23	23
9	MJ20-B9	20UP1A0448	Mannem Panchakshari	IOT Based Smart Mirror with News and Temperature	Ms. G. Susmitha	25	23	23	24
		21UP5A0416	Pabbireddy Jishitha			22	23	25	23
		20UP1A0425	Kukkala Vindya			23	25	23	24
		20UP1A0436	Purma Keerthana			24	23	24	24
10	MJ20-B10	20UP1A0426	Kurapati Revathi	A CNN based framework for comparison of contactless to contact based finger prints	Mrs. D. Sirisha	25	25	25	25
		21UP5A0420	Pothkani Swetha			23	23	23	23
		21UP5A0427	Thakkala Deepthi			25	24	24	24
11	MJ20-B11	20UP1A0430	Nareddy Pavani	Criminal identification system	Dr. Vijaykumar R Urkude	23	23	25	24
		20UP1A0445	Vuppala Tejaswini Reddy			24	24	23	24
		20UP1A0444	Vundavalli Sai Naga Shreshta			22	23	25	23

Project Coordinator for ECE-B

HOD-ECE