

ACADEMIC REGULATIONS-2023 (R23)

For

**B.TECH FOUR YEAR DEGREE COURSE
(Applicable for the batches admitted from 2023-24)**



LENDI INSTITUTE OF ENGINEERING & TECHNOLOGY

An Autonomous Institution

Approved by AICTE & Permanently Affiliated to JNTUGV, Vizianagaram

Accredited by NAAC with 'A Grade'

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LENDI INSTITUTE OF ENGINEERING & TECHNOLOGY:VIZIANAGRAM
(Autonomous)

Academic Regulations (R23) for B. Tech (Regular-Full time)
(Effective for the students admitted into I year from the Academic Year 2023-24 onwards)

The following academic regulations will be applicable to the students admitted into First Year of B. Tech. (Regular, with Honors/Minors) from the Academic Year 2023-24 under Autonomous system.

- 1. Eligibility for Admission:** Admission to the B. Tech Program shall be made subject to the eligibility, qualifications and specialization prescribed by the A.P. State Government/University from time to time. Admissions shall be made either based on the merit rank obtained by the student in the common entrance examination conducted by the A.P. Government/University or any other order of merit approved by the A.P. Government/University, subject to reservations as prescribed by the Government/University from time to time.
 - a. I Year B.Tech(U.G):** The total seats available as per the AICTE approved intake are grouped into two categories (i.e)Category A and Category B in the ratio of 70:30 as per Andhra Pradesh State Council for Higher Education (APSCHE) in consonance with government reservation policy.
 - Under Category A: 70% of the seats are filled through EAMCET counseling.
 - Under Category B: 30% seats are filled based on 10+2 merits in compliance with guidelines of APSCHE.
 - b. II Year B.Tech (U.G):** Under Lateral Entry Scheme students with Diploma/B.Sc qualification have an option of direct admission into 2nd year B.Tech. (Lateral Entry Scheme). Under this scheme 10% seats of sanctioned intake will be available in each course as supernumerary seats as per Andhra Pradesh State Council for Higher Education (APSCHE). Admissions to this three year B.Tech Lateral Entry Programme take place through ECET as per government policy.
- 2. Duration of the Programme:**
 - a. B.Tech(U.G):** The course duration for the award of the Degree in Bachelor of Technology will be 4 academic years, with two semesters in each year. However, if a student is unable to complete the course within 4 years, he/she can do so by giving more attempts but within 8 consecutive academic years from the date of admission.
 - b. B.Tech (U.G) Under Lateral Entry:** The course duration for the award of the Degree in Bachelor of Technology will be 3 academic years, with two semesters in each year. However, if a student is unable to complete the course within 3 years, he/she can do so by giving more attempts but within 6 consecutive academic years from the date of admission.
- 3. Medium of Instruction:** The medium of instruction of the entire B. Tech undergraduate programme in Engineering & Technology (including examinations and project reports) will be in English only.

4. Program related terms

Credit: A unit by which the course work is measured. It determines the number of hours of instruction required per week. One credit is equivalent to one hour of teaching (Lecture/Tutorial) or two hours of practical work/field work per week.

Credit definition:

1 Hr. Lecture (L) per week	1 credit
1 Hr. Tutorial (T) per week	1 credit
1 Hr. Practical (P) per week	0.5 credit
2 Hrs. Practical (Lab) per week	1 credit

- a) **Academic Year:** Two consecutive (one odd + one even) semesters constitute one academic year.
- b) **Choice Based Credit System (CBCS):** The CBCS provides a choice for students to select from the prescribed courses.

5. Programme Pattern:

- a. Total duration of the of B. Tech (Regular) Programme is four academic years
- b. Each Academic year of study is divided in to **two semesters**.
- c. Minimum number of instruction days in each semester is 90.
- d. Grade points, based on percentage of marks awarded for each course will form the basis for calculation of SGPA (Semester Grade Point Average) and CGPA (Cumulative Grade Point Average).
- e. The total credits for the Programme is 160.
- f. There shall be mandatory student induction program for freshers, with a two/three-week duration before the commencement of first semester. Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations etc., are included as per the guidelines issued by AICTE.
- g. Student is introduced to “Choice Based Credit System(CBCS)”.
- h. A student has to register for all courses in a semester.
- i. All the registered credits will be considered for the calculation of final CGPA.
- j. Each semester has “Continuous Internal Evaluation (CIE)” and “Semester End Examination (SEE)”. Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) as indicated by UGC and course structure as suggested by AICTE are followed.
- k. Health/wellness/yoga/sports and NSS /NSS /Scouts & Guides / Community service activities are made mandatory as credit courses for all the undergraduate students.
- l. Courses like Environmental Sciences, Indian Constitution, Technical Paper Writing & IPR are offered as non-credit mandatory courses for all the undergraduate students.
- m. Design Thinking for Innovation & Tinkering Labs are made mandatory as credit courses for all the undergraduate students.
- n. Increased flexibility for students through an increase in the elective component of the curriculum, with 05 Professional Elective courses and 04 Open Elective courses/Minor track.

- o. Professional Elective Courses, include the elective courses relevant to the chosen specialization/branch. Proper choice of professional elective courses can lead to students specializing in emerging areas within the chosen field of study.
- p. A total of 04 Open Electives are offered in the curriculum. A student can complete the requirement for Minor within the 160 credits by opting for the courses offered through various verticals/tracks under Open Electives.
- q. While choosing the electives, students shall ensure that they do not opt for the courses with syllabus contents similar to courses already pursued.
- r. A pool of interdisciplinary/job-oriented/domain skill courses which are relevant to the industry are integrated into the curriculum of all disciplines. There shall be 05 skill-oriented courses offered during III to VII semesters. Among the five skill courses, four courses shall focus on the basic and advanced skills related to the domain/interdisciplinary courses and the other shall be a soft skills course.
- s. Students shall undergo mandatory summer internships, for a minimum of eight weeks duration at the end of second and third year of the programme. The internship at the end of second year shall be community oriented and industry internship at the end of third year.
- t. There shall also be mandatory full internship in the final semester of the programme along with the project work.
- u. Undergraduate degree with Honours is introduced by the Institution for the students having good academic record.
- v. Each college shall take measures to implement Virtual Labs (<https://www.vlab.co.in>) which provide remote access to labs in various disciplines of Engineering and will help student in learning basic and advanced concept through remote experimentation. Student shall be made to work on virtual lab experiments during the regular labs.
- w. Each college shall assign a faculty advisor/mentor after admission to a group of students from same department to provide guidance in courses registration/career growth/placements/opportunities for higher studies/GATE/other competitive exams etc.
- x. Preferably 25% of course work for the theory courses in every semester shall be conducted in the blended mode of learning.

6. Award of the Degree

(a) Award of the B.Tech. Degree :

A student will be declared eligible for the award of the B.Tech. degree if he/she fulfils the following:

- (i) Pursues a course of study for not less than four academic years and not more than eight academic years. However, for the students availing Gap year facility this period shall be extended by two years at the most and these two years would in addition to the maximum period permitted for graduation (Eight years).
- (ii) Registers for 160 credits and secures all 160 credits.

(b) Award of B.Tech. degree with Honors

A student will be declared eligible for the award of the B.Tech. with Honors if he/she fulfils the following:

- (i) Student secures additional 15 credits fulfilling all the requisites of a B.Tech. program i.e., 160 credits.
- (ii) Registering for Honors is optional.
- (iii) Honors is to be completed simultaneously with B.Tech. programme.

(c) Award of B.Tech. degree with Minors

A student will be declared eligible for the award of the B.Tech. with Minors if he/she fulfils the following:

- (i) Student secures all the requisites of a B.Tech. program i.e., 160 credits.
- (ii) Registering for Minors is optional and students registered all open electives as Minors track with 12 credits from single stream.
- (iii) Minors is to be completed simultaneously with B.Tech. programme.

7. Students, who fail to fulfil all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in B.Tech. course and their admission stands cancelled. This clause shall be read along with clause 6 a) i).

8. Courses of Study:

The following courses of study are offered at present as specializations for the B.Tech. Courses with English as medium of Instruction.

S. No	Branch	Branch Code
01	Electrical and Electronics Engineering	EEE
02	Mechanical Engineering	MEC
03	Electronics and Communication Engineering	ECE
04	Computer Science and Engineering	CSE
05	Computer Science and Systems Engineering	CSS
06	Computer Science and Information Technology	CIT
07	Computer Science and Engineering (Artificial Intelligence and Machine Learning)	CSM

9. Structure of the Undergraduate Programme

All courses offered for the undergraduate program (B. Tech.) are broadly classified as follows:

S.No.	Category	Breakup of Credits (Total 160)	Percentage of total credits	AICTE Recommendation (%)
1.	Humanities and Social Science including Management (HM)	13	8 %	8 – 9%
2.	Basic Sciences (BS)	20	13 %	12 - 16%
3.	Engineering Sciences (ES)	23.5	14%	10 – 18%
4.	Professional Core (PC)	54.5	34 %	30 – 36%
5.	Electives – Professional (PE) & Open (OE); Domain Specific Skill Enhancement Courses (SEC)	33	21 %	19 - 23%
6.	Internships & Project work (PR)	16	10 %	8 – 11%
7.	Mandatory Courses (MC)	Non-credit	Non-credit	-

10. Course Classification:

All subjects/ courses offered for the undergraduate programme in Engineering & Technology (B.Tech. degree programmes) are broadly classified as follows:

S.No.	Broad Course Classification	Course Category	Description
1.	Foundation Core Courses	Foundation courses	Includes Mathematics, Physics and Chemistry; fundamental engineering courses; humanities, socialsciences and management courses
2.	Core Courses	Professional Core Courses (PC)	Includes subjects related to the parent discipline/department/branch of Engineering
3.	Elective Courses	Professional Elective Courses (PE)	Includes elective subjects related to the parent discipline/department/ branch of Engineering
		Open Elective Courses (OE)	Elective subjects which include interdisciplinary subjects or subjects in an area outside the parent discipline/ department/ branch of Engineering
		Domain specific skill enhancement courses (SEC)	interdisciplinary/job-oriented/domaincourses which are relevant to the industry
4.	Project & Internships	Project	B.Tech. Project or Major Project
		Internships	Summer Internships – Community based and Industry Internships; Industry oriented Full Semester Internship
5.	Audit Courses	Mandatory non-credit courses	Covering subjects of developing desired attitude among the learners

11. Method of Evaluation & Distribution and Weightage of Marks: The Outcome Based Curriculum Structure consists of courses of study viz. Theory, Practical, Drawing, Socially relevant projects, Mini project, Project, Mandatory courses, Skill oriented courses, MOOCs, Summer Internship. Under Choice Based Credit System (CBCS), the students also have the flexibility to choose one elective from the list of open electives offered by other branches of engineering technology in consultation with their respective departments.

No	Course	Marks for Assessment		Total Marks
		Internal	Semester End	
1	Theory Course	30	70	100
2	Laboratory	30	70	100
3	Drawing Course	30	70	100
4	Elective Courses	30	70	100
5	Project Work	60	140	200
6	Summer Internship	-	50	50
7	Mandatory Courses	30	-	30
8	Skill oriented Courses	30	70	100

- a. **Theory Courses:** The performance of a student in each semester shall be evaluated subject-wise with a maximum of 100 marks for theory subject. The distribution shall be 30 marks for Continuous Internal Assessment and 70 marks for the Semester End - Examinations.

(i) Continuous Internal Assessment:

- i. Two descriptive examinations shall be conducted during the semester for theory courses.
- ii. As the syllabus is framed for 5 units, the 1st and 2nd mid examinations (Subjective exam, objective exam & Assignment) are conducted on each cycle (i.e) 1-2½ units and 2½ -5 units respectively for each subject in a semester. However, 3 units each cycle for theory subjects consisting of two parts of different subjects(having 6 units).
- iii. **Subjective exam:** Subjective examination shall be conducted in each cycle. Subjective paper shall contain 3 either or type questions and each question carry 10 marks. The marks obtained in the subjective paper are condensed to 15 marks. Any fraction shall be rounded off to the next higher mark.
- iv. **Objective exam:** Objective examination shall be conducted in each cycle. The objective paper shall be prepared in line with the quality of competitive examinations questions. The objective paper shall be conducted offline on the day of subjective paper test. Objective paper shall contain for 20 multiple choice questions for 10 marks. Any fraction shall be rounded off to the next higher mark.
- v. **Assignment:** Assignments shall be in the form of problems, mini projects, design problems, slip tests, quizzes etc., depending on the course content. It should be continuous assessment throughout the semester and the average marks shall be considered. The weightage of Assignments is 5 marks during each cycle in each semester for each theory subjects.
- vi. The weightage of each mid exam for 30 consists of Descriptive exam –15, Objective-10 and Assignment-5(Theory).
- vii. If the student is absent for the mid semester examination, no re-exam shall be conducted and mid semester marks for that examination shall be considered as zero.
- viii. Final mid semester marks shall be arrived at by considering the marks secured by the student in both the mid examinations with 80% weightage given to the better mid exam and 20% to the other.

(ii) Semester End -Evaluation:

- i. The end semester examination is conducted covering the topics of all Units for 70 marks. And the question paper contains two parts (A) and (B). There shall be 6 questions and all questions are compulsory.
- ii. In part (A) contains 10 compulsory short answer questions (i.e., 2 short answer question from each unit) for a total of 20 marks such that each question carries 2 marks.
- iii. In part (B) contains 5 Questions with internal choice for a total of 50 marks. A student shall answer all Questions and each carrying 10marks.
- iv. However, theory subjects consisting of two parts of different subjects, for

Example: Basic Electrical & Electronics Engineering shall have the following pattern. Question paper shall be in two parts viz., Part A and Part B with equal weightage of 35 marks each. In each part, question 1 shall contain 5 compulsory short answer questions for a total of 5 marks such that each question carries 1 mark. In each part, questions from 2 to 4, there shall be either/or type questions of 10 marks each. Student shall answer any one of them. The questions from 2 to 4 shall be set by covering one unit of the syllabus for each question.

- v. **For Communicative English Theory Course**, the language skills learnt in the units is tested on the themes related the present day context with a global exposure. Neither the formative nor summative assessment procedures should test the memory of the content of the texts given in the textbook. Only new unseen passages are to be given to test reading skills of the learners. Written skills are to be tested from sentence level to essay level. The communication formats—emails, letters and reports-- are to be tested along with appropriate language and expressions.

- b. **Practical Courses:** The performance of a student in each semester shall be evaluated subject-wise with a maximum of 100 marks for practical subject. For practical subjects there shall be continuous evaluation during the semester for 30 internal marks and 70 end examination marks. However, in a practical subject consisting of two parts (Eg: Basic Electrical & Electronics Engineering Lab), the end examination shall be conducted for 35 marks in each part. Mid semester examination shall be evaluated as above for 30 marks in each part and final mid semester marks shall be arrived by considering the average of marks obtained in two parts.
 - (i) **Internal Evaluation:** The internal 30 marks shall be awarded as follows: day to day work) - 15 marks by the concerned laboratory teacher based on the regularity/record/viva, and the remaining 15 marks to be awarded by conducting an internal laboratory test.
 - (ii) **External Evaluation:** The end examination shall be conducted for 70 marks by the teacher concerned and an external examiner nominated by the Controller of Examinations (CoE). The 70 marks for end examination shall be award for Procedure: 20 marks, Experimental work & Results: 30 marks and Viva voce: 20 marks.

- c. **Design/Drawing Subjects:** For the subject having design and / or drawing, (such as Engineering Graphics, Engineering Drawing, Machine Drawing) and estimation, the distribution shall be 30 marks for internal evaluation and 70 marks for end examination.
 - (i) **Internal Evaluation:** Day-to-day work shall be evaluated for 15 marks by the concerned subject teacher based on the reports/submissions prepared in the class. And there shall be two midterm examinations in a semester for duration of 2 hours each for 15 marks with weightage of 80% to better mid marks and 20% for the other. The subjective paper shall contain 3 either or type questions of equal weightage of 5 marks. There shall be no objective paper in mid semester examination. The sum of day-to-day evaluation and the mid semester marks will be the final sessional marks for the subject.

(ii) Semester End -Evaluation:

- a. The end semester examination is conducted covering the topics of all Units for 70 marks. And the question paper contains 5 Questions with internal choice.
- b. The question paper contains 5 Questions with internal choice. A student should be answered all Questions and each carrying 14 marks.

d. Mandatory Courses: Mandatory courses are among the compulsory courses and do not carry any credits. There shall be no external examination for mandatory courses with zero credits. However, attendance shall be considered while calculating aggregate attendance and student shall be declared to have passed the mandatory course only when he/she secures 40% or more in the internal examinations.

- i. All the students (regular and lateral entry students) shall complete the mandatory courses similar to other regular courses.
- ii. The weightage of Mandatory Courses for 30 consists of Descriptive-15, Objective -10, Assignments-5.
- iii. Two descriptive examinations shall be conducted during the semester for theory subjects.
- iv. As the syllabus is framed for 5 units, the 1st and 2nd mid examinations (Descriptive exam) are conducted on 1-2½ units and 2½ -5 units respectively for each subject in a semester. The mid examination (Descriptive exam) question paper shall contain 3 questions and all questions need to be answered in 90 minutes duration for 30 marks. Further, each mid examination marks shall be scale down to 15 marks.
- v. The objective examination is for 20 minutes duration. Objective -10 (Conducted at College level with 20 Multiple choice question with a weightage of ½ Mark each).
- vi. Assignments: The weightage of Assignments is 5 marks during each cycle in the semester for each theory subjects.
- vii. The Objective examination conducted for 10 marks and Descriptive examination conducted for 15, Assignments 5 marks are to be added for finalizing internal marks in each mid exam.
- viii. Final semester marks shall be arrived at by considering the marks secured by the student in both the mid examinations with 80% weightage given to the better mid exam and 20% to the other.
- ix. The results will be indicated with “Satisfactory” and it will not be accounted for the calculation of CGPA.
- x. Student shall be declared to have passed the Mandatory Courses only when he/she secures 40% or more in the final marks. In case, the student fails, a re-examination on descriptive shall be conducted for failed candidates every six months/semester at a mutually convenient date of the college/students.
- xi. The internal evaluation will be conducted. No external evaluation will be conducted.

e. Skill oriented Courses

- i. There shall be five skill-oriented courses offered during III to VII semesters.
- ii. Out of the five skill courses two shall be skill-oriented courses from the same domain. Of the remaining three skill courses, one shall be a soft skill course and the remaining two shall be skill-advanced courses from the same domain/Interdisciplinary/Job oriented.
- iii. The course shall carry 100 marks and shall be evaluated through continuous assessments during the semester for 30 sessional marks and end examination shall be for 70 marks. Day-to-day work in the class / laboratory shall be evaluated for 30 marks by the concerned teacher based on the regularity/assignments/viva/mid semester test. The end examination similar to practical examination pattern shall be conducted by the concerned teacher and an external Faculty member in the subject nominated by the principal.
- iv. The Head of the Department shall identify a faculty member as coordinator for the course. A committee consisting of the Head of the Department, coordinator and a external Faculty member nominated by the Principal shall monitor the evaluation process. The marks shall be assigned to the students by the above committee based on their performance.
- v. The student shall be given an option to choose either the skill courses being offered by the college or to choose a certificate course being offered by industries/Professional bodies or any other accredited bodies. If a student chooses to take a Certificate Course offered by external agencies, the credits shall be awarded to the student upon producing the Course Completion Certificate from the agency. A committee shall be formed at the level of the college to evaluate the marks given for a course by external agencies and convert to the equivalent marks.
- vi. The recommended courses offered by external agencies, conversions and appropriate marks are to be approved by the principal at the beginning of the semester.
- vii. If a student prefers to take a certificate course offered by external agency, the department shall mark attendance of the student for the remaining courses in that semester excluding the skill course in all the calculations of mandatory attendance requirements upon producing a valid certificate as approved by the principal.

f. Communicative English Lab Course: The performance of a student in each semester shall be evaluated subject-wise with a maximum of 75 marks for Communicative English Lab Course. For Communicative English Lab Course there shall be continuous evaluation during the semester for 30 internal marks and 75 end examination marks..

(i) **Internal Evaluation:** The internal 30 marks shall be awarded as follows:

Day to Day Performance (10M)	Record (5M)	Internal Exam (15M)	Final Total (30 M)
<i>In- lab Activity Participation and day to day Assessment performance (10)</i>	<i>Completing the exercises in Lab Manual cum Record (5)</i>	<i>Written Exam (10) +Oral (5)</i>	30(M)

(ii) **External Evaluation:**

- i. The end examination shall be conducted for 70 marks by the teacher concerned and an external examiner nominated by the Controller of Examinations (CoE).
- ii. The 70 marks for end examination shall be awarded as per the following Procedure:
 - **Written test:** 30 marks on Listening, Reading, Writing, Grammar & Vocabulary . LRWGV Activities are given from the entire Syllabi.
 - **Oral Exam:** 20 marks on Debate/GD/Oral presentation (Speaking test)
 - **Viva-Voce :** Viva-Voce by the External Examiner: 20 marks

g. **Health& Wellness, Yoga & Sports / NSS, NCC, Scouts & Guides/ Community Service:**

- i. Institutes must assign slots in the Timetable for the activities.
- ii. Institutes are required to provide instructor to mentor the students.
- iii. Evaluated for a total of 100 marks.
- iv. A student can select 6 activities of his/her choice with a minimum of 01 activity per unit. Each activity shall be evaluated by the concerned teacher for 15 marks, totalling to 90 marks.
- v. A student shall be evaluated by the concerned teacher for 10 marks by conducting viva voce on the subject.

h. **Universal Human Values 2: Understanding Harmony Course:** The performance of a student of course entitled “**Universal Human Values 2: Understanding Harmony** ” in 2nd year shall be evaluated with a maximum of 100 marks. The distribution shall be 30 marks for Internal Evaluation and 70 marks for the Semester End -Examinations.

(i) **Internal Evaluation:**

- i. The weightage of Internal marks for 30 consists of day to day performance (10 marks), project report on case study (10 marks) and presentation including viva (10 marks).
- ii. There are no midterm examinations for this course.

(ii) **Semester End -Evaluation:**

- i. The end semester examination is conducted covering the topics of all Units for 70 marks. And the question paper contains 5 Questions with internal choice.
- ii. The question paper contains 5 Questions with internal choice. A student should be answered all Questions and each carrying 14 marks.
- iii. The questions should be focussed on different case studies/situations/issues. The expected answers to the questions on their interpretations and how the student addressing issues.

Pass criteria:

- i. The pass criteria should be similar to other theory subjects (i.e) student is deemed to have satisfied the minimum academic requirements if he/she has earned the credits allotted to this course by securing not less than 35% of marks in the end semester examination, and minimum 40% of marks in the sum total of the internal marks and end semester examination marks.

- ii. The supplementary examination will be conducted for semester end examination if any student failed to fulfil the above requirements. However, there is no supplementary examination shall be conducted for internal examinations
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- i. **Massive Open Online Courses (MOOCs):** Adoption of MOOCs is mandatory, to enable Blended model of teaching-learning as also envisaged in the NEP 2020. As per University Grants Commission (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016, the University shall allow up to a maximum of 20% of the total courses being offered in a particular programme i.e., maximum of 32 credits through MOOCs platform.
 - i. A Student has to pursue and complete minimum one course compulsorily through MOOCs approved by the BOS. A student can pursue courses other than core through MOOCs and it is mandatory to complete one course successfully through MOOCs for awarding the degree. A student is not permitted to register and pursue core courses through MOOCs.
 - ii. A student shall register for the course (Minimum of either 8 weeks or 12 weeks) offered through MOOCs with the approval of Head of the Department. The Head of the Department shall appoint one mentor to monitor the student's progression. The student needs to earn a certificate by passing the exam. The student shall be awarded the credits assigned in the curriculum only by submission of the certificate. Examination fee, if any, will be borne by the student.
 - iii. Students who have qualified in the proctored examinations conducted through MOOCs platform can apply for credit transfer as specified and are exempted from appearing internal as well as external examination (for the specified equivalent credit course only) conducted by the university/Institution.
 - iv. The institution shall offer credit mobility for MOOCs and give the equivalent credit weightage to the students for the credits earned through online learning courses.
 - v. Student registration for the MOOCs shall be only through the respective department of the institution, it is mandatory for the student to share necessary information with the department.
 - vi. Credit transfer policy will be applicable to the Professional & Open Elective courses only.
 - vii. The concerned department shall identify the courses permitted for credit transfer.
 - viii. The institution shall notify at the beginning of semester the list of the online learning courses eligible for credit transfer.
 - ix. The institution shall ensure no overlap of MOOC exams with that of the end semester examination schedule. In case of delay in results, the institution will re-issue the marks sheet for such students.
 - x. Student pursuing courses under MOOCs shall acquire the required credits only after successful completion of the course and submitting a certificate issued by the competent authority along with the percentage of marks and grades.
 - xi. Students shall be permitted to register for MOOCs offered through online platforms approved by the University from time to time.

- xii. Necessary amendments in rules and regulations regarding adoption of MOOC courses would be proposed from time to time.

j. Mandatory Internships:

(i) Summer Internships:

- a. Two summer internships either onsite or virtual each with a minimum of 08 weeks duration, done at the end of second and third years, respectively are mandatory.
- b. It shall be completed in collaboration with local industries, Govt. Organizations, construction agencies, Hydel and thermal power projects, software MNCs or any industries in the areas of concerned specialization of the Undergraduate program.
- c. One of the two summer internships shall be society oriented and shall be completed in collaboration with government organizations/NGOs& others.
- d. The other internship at the end of third year is Industry Internship and shall be completed in collaboration with Industries.
- e. The student shall register for the internship as per course structure after commencement of academic year.
- f. Evaluation of the summer internships shall be through the departmental committee.
- g. A student will be required to submit a summer internship report to the concerned department and appear for an oral presentation before the departmental committee comprising of Head of the Department, supervisor of the internship and a senior faculty member of the department.
- h. A certificate of successful completion from industry shall be included in the report.
- i. The report and the oral presentation shall carry 50% weightage each. It shall be evaluated for 50 external marks.
- j. There shall be no internal marks for Summer Internship.
- k. A student shall secure minimum 40% of marks for successful completion. In case, if a student fails, he/she shall reappear as and when semester supplementary examinations are conducted by the institution.

(ii) Full Semester Internship and Project work:

- a. In the final semester, the student should mandatorily register and undergo internship (onsite/virtual) and in parallel he/she should work on a project with well-defined objectives.
- b. At the end of the semester the candidate shall submit an internship completion certificate and a project report.
- c. A student shall also be permitted to submit project report on the work carried out during the internship.
- d. The project report shall be evaluated with an external examiner. The total marks for project work 200 marks and distribution shall be 60 marks for internal and 140 marks for external evaluation.
- e. The supervisor assesses the student for 30 marks (Report: 15 marks, Seminar: 15 marks).
- f. At the end of the semester, all projects shall be showcased at the department for the benefit of all students and staff and the same is to be evaluated by the

departmental Project Review Committee consisting of supervisor, a senior faculty and HOD for 30 marks.

- g. The external evaluation of Project Work is a Viva-Voce Examination conducted in the presence of internal examiner and external examiner appointed by the Institution and is evaluated for 140 marks
- h. The College shall facilitate and monitor the student internship programs. Completion of internships is mandatory, if any student fails to complete internship, he/she will not be eligible for the award of degree. In such cases, the student shall repeat and complete the internship.

12. Academic Bank of Credits (ABC): The Institution shall foresee implementation of Academic Bank of Credits (ABC) to promote flexibility in curriculum as per NEP 2020 to

- i. provide option of mobility for learners across the universities of their choice
- ii. provide option to gain the credits through MOOCs from approved digital platforms.
- iii. facilitate award of certificate/diploma/degree in line with the accumulated credits in ABC
- iv. execute Multiple Entry and Exit system with credit count, credit transfer and credit acceptance from students' account.

13. Guidelines for offering a B.Tech with Minor Degree:

The Minor program requires the completion of 12 credits.

- i) Two courses for 06 credits related to a Minor are to be pursued compulsorily for the minor degree, but maybe waived for students who have done similar/equivalent courses. If waived for a student, then the student must take an extra elective course in its place. It is recommended that students should complete the compulsory courses (or equivalents) before registering for the electives.
- ii) Electives (minimum of 2 courses) to complete a total of 12 credits.

Note: A total of 04 Open Electives are offered in the curriculum. A student can complete the requirement for Minor within the 160 credits by opting for the courses offered through various verticals/tracks under Open Electives.

14. Guidelines for offering a B.Tech with Honours Degree: The objective of introducing B.Tech.(Hons.) is to facilitate the students to choose additionally the specialized courses of their choice and build their competence in a specialized area in the UG level. The programme is a best choice for academically excellent students having good academic record and interest towards higher studies and research.

i. Structure of B.Tech with Honors Program

- i) Honours is introduced in the curriculum of all B. Tech. programs offering a major degree and is applicable to all B. Tech (Regular and Lateral Entry) students admitted in Engineering & Technology.
- ii) A student shall earn additional 15 credits for award of B.Tech.(Honors) degree from same branch/department/discipline registered for major degree. This is in addition to the credits essential for obtaining the Undergraduate degree in Major Discipline (i.e., 160 credits).
- iii) A student is permitted to register for Honours in IV semester after the results

of III Semester are declared and students may be allowed to take maximum two subjects per semester pertaining to the Honours from V Semester onwards.

- iv) The concerned Head of the Department shall arrange separate class work and timetable of the courses offered under Honours program.
- v) Courses that are used to fulfil the student's primary major may not be double counted towards the Honours. Courses with content substantially equivalent to courses in the student's primary Major may not be counted towards the Honours.
- vi) Students can complete the courses offered under Honours either in the college or in online platforms like SWAYAM with a minimum duration of 12 weeks for a 3-credit course and 8 weeks duration for a 2-credit course satisfying the criteria for credit mobility. If the courses under Honours are offered in conventional mode, then the teaching and evaluation procedure shall be similar to regular B. Tech courses.
- vii) The attendance for the registered courses under Honours and regular courses offered for Major degree in a semester are to be considered separately.
- viii) A student shall maintain an attendance of 75% in all registered courses under Honours to be eligible for attending semester end examinations.
- ix) A student registered for Honours shall pass in all subjects that constitute the requirement for the Honours degree program. No class/division (i.e., second class, first class and distinction, etc.) shall be awarded for Honours degree programme.
- x) If a student drops or is terminated from the Honours program, the additional credits so far earned cannot be converted into open or core electives; they will remain extra. However, such students will receive a separate grade sheet mentioning the additional courses completed by them.
- xi) The Honours will be mentioned in the degree certificate as Bachelor of Technology (Honours) in XYZ. For example, B.Tech. (Honours) in Mechanical Engineering

ii. Enrolment into Honours:

- i) Students of a Department/Discipline are eligible to opt for Honours program offered by the same Department/Discipline
- ii) The enrolment of student into Honours is based on the CGPA obtained in the major degree program. CGPA shall be taken up to III semester in case of regular entry students and only III semester in case of lateral entry students. Students having 7 CGPA without any backlog subjects will be permitted to register for Honours.
- iii) If a student is detained due to lack of attendance either in Major or in Honours, registration shall be cancelled.
- iv) Transfer of credits from Honours to regular B. Tech degree and vice-versa shall not be permitted.
- v) Honours is to be completed simultaneously with a Major degree program.

iii. Registration for Honours:

- i) The eligible and interested students shall apply through the HOD of his/her parent department. The whole process should be completed within one week before the start of every semester. Selected students shall be permitted to register the courses under Honours.
- ii) The selected students shall submit their willingness to the Principal through

his/her parent department offering Honours. The parent department shall maintain the record of student pursuing the Honours.

- iii) The students enrolled in the Honours courses will be monitored continuously. An advisor/mentor from parent department shall be assigned to a group of students to monitor the progress.
- iv) There is no fee for registration of subjects for Honours program offered in offline at the respective institutions.

15. Attendance Requirements:

- i. A student shall be eligible to appear for the University external examinations if he/she acquires a minimum of 40% attendance in each subject and 75% of attendance in aggregate of all the subjects. b) Condonation of shortage of attendance in aggregate up to 10% (65% and above and below 75%) in each semester may be granted by the College Academic Committee.
- ii. Shortage of Attendance below 65% in aggregate shall in NO CASE be condoned.
- iii. A stipulated fee shall be payable towards condonation of shortage of attendance to the University.
- iv. Students whose shortage of attendance is not condoned in any semester are not eligible to take their end examination of that class and their registration shall stand cancelled.
- v. A student will not be promoted to the next semester unless he satisfies the attendance requirements of the present semester. They may seek readmission for that semester from the date of commencement of class work.
- vi. If any candidate fulfils the attendance requirement in the present semester, he shall not be eligible for readmission into the same class.
- vii. If the learning is carried out in blended mode (both offline & online), then the total attendance of the student shall be calculated considering the offline and online attendance of the student.
- viii. For induction programme attendance shall be maintained as per AICTE norms.

16. Minimum Academic Requirements & Promotion Rules:

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item no 15.

- a. A student is deemed to have satisfied the minimum academic requirements if he/she has earned the credits allotted to each theory/practical design/drawing subject/project by securing not less than 35% of marks in the end semester exam, and minimum 40% of marks in the sum total of the internal marks and end semester examination marks.
- b. A student shall be promoted from first year to second year if he fulfills the minimum attendance requirement.
- c. A student will be promoted from II to III year if he/she fulfils the academic requirement of securing 40% of the credits (any *decimal* fraction should be *rounded off to lower* digit) up to in the subjects that have been studied up to III semester.
- d. A student shall be promoted from III year to IV year if he/she fulfils the academic requirements of securing 40% of the credits (any *decimal* fraction should

be **rounded off to lower** digit) in the subjects that have been studied up to V semester. And in case a student is detained for want of credits for a particular academic year by ii) & iii) above, the student may make up the credits through supplementary examinations and only after securing the required credits he/she shall be permitted to join in the V semester or VII semester respectively as the case may be.

- e. When a student is detained due to lack of credits/shortage of attendance he/she may be re-admitted when the semester is offered after fulfilment of academic regulations. In such case, he/she shall be in the academic regulations into which he/she is readmitted.
- f. A student shall register and put up minimum attendance in all 160 credits and earn all 160 credits.

17. **Grading:** As a measure of the student’s performance, a 10-point Absolute Grading System using the following Letter Grades and corresponding percentage of marks shall be followed: After each course is evaluated for 100 marks, the marks obtained in each course will be converted to a corresponding letter grade as given below, depending on the range in which the marks obtained by the student fall.

Structure of Grading of Academic Performance

Range in which the marks in the subject fall	Grade	Grade points Assigned
90 & above	S (Superior)	10
80 - 89	A(Excellent)	9
70 - 79	B(Very Good)	8
60 - 69	C(Good)	7
50 - 59	D(Average)	6
40 - 49	E(Pass Average)	5
< 40	F (Fail)	0
Absent	Ab(Absent)	0

- (i) A student obtaining Grade ‘F’ or Grade ‘Ab’ in a subject shall be considered failed and will be required to reappear for that subject when it is offered the next supplementary examination.
- (ii) For non-credit audit courses, “Satisfactory” or “Unsatisfactory” shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA/Percentage.

Computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average(CGPA): The Semester Grade Point Average (SGPA) is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.,

$$SGPA = \frac{\sum(C_i \times G_i)}{\sum C_i}$$

where, C_i is the number of credits of the i^{th} subject and G_i is the grade point scored by the student in the i^{th} course.

The Cumulative Grade Point Average (CGPA) will be computed in the same manner considering all the courses undergone by a student over all the semesters of a program ,i.e.,

$$CGPA = \frac{\sum(C_i \times S_i)}{\sum C_i}$$

where “S_i” is the SGPA of the ith semester and C_i is the total number of credits up to that semester.

Both SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts. While computing the SGPA the subjects in which the student is awarded Zero grade points will also be included.

(iii) **Grade Point:** It is a numerical weight allotted to each letter grade on a 10-point scale. Letter Grade: It is an index of the performance of students in a said course. Grades are denoted by the letters S, A, B, C, D and F.

18. Award of Class: After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of B. Tech. Degree, he/she shall be placed in one of the following four classes:

Class Awarded	CGPA Secured
First Class with Distinction*	≥ 7.5
First Class	$\geq 6.5 < 7.5$
Second Class	$\geq 5.5 < 6.5$
Pass Class	$\geq 5.0 < 5.5$

Note: * Students who have written supplementary examinations to fulfil the credit requirement will not be awarded First Class with Distinction. For such students the highest degree that is awarded will be First Class Only.

CGPA to Percentage conversion Formula – $(CGPA - 0.5) \times 10$

19. With-holding of Results: If the candidate has any dues not paid to the university or if any case of indiscipline or malpractice is pending against him/her, the result of the candidate shall be withheld in such cases.

20. Multiple Entry / Exit Option:

(a) Exit Policy:

- i) **UG Certificate in (Field of study/discipline)** - Programme duration: First year (first two semesters) of the undergraduate programme, 40 credits followed by an additional exit 10-credit bridge course(s) lasting two months, including at least 6-credit job-specific internship/ apprenticeship that would help the candidates acquire job-ready competencies required to enter the workforce.
- ii) **UG Diploma (in Field of study/discipline)** - Programme duration: First two years (first four semesters) of the undergraduate programme, 80 credits followed by an additional exit 10-credit bridge course(s) lasting two months, including at least 6-credit job-specific internship/ apprenticeship that would help the candidates acquire job-ready competencies required to enter the workforce.
- iii) **Bachelor of Science (in Field of study/discipline) i.e., B.Sc. Engineering in (Field of study/discipline)**- Programme duration: First three years (first six semesters) of the undergraduate programme, 120 credits.

(b) Entry Policy:

Modalities on multiple entry by the student into the B.Tech. programme will be provided in due course of time.

Note: The Universities/APSCHÉ shall resolve any issues that may arise in the implementation of Multiple Entry and Exit policies from time to time and shall review the policies in the light of periodic changes brought by UGC, AICTE and State government.

21. Gap Year Concept: Gap year concept for Student Entrepreneur in Residence is introduced and outstanding students who wish to pursue entrepreneurship are allowed to take a break of one year at any time after II year to pursue full-time entrepreneurship. This period may be extended to two years at the most and these two years would not be counted for the time for the maximum time for graduation. The principal of the respective college shall forward such proposals submitted by the students to the University. An evaluation committee constituted by the University shall evaluate the proposal submitted by the student and the committee shall decide whether to permit the student(s) to avail the Gap Year or not

22. Transitory Regulations

- a. Discontinued, detained, or failed candidates are eligible for readmission as and when the semester is offered after fulfilment of academic regulations. Candidates who have been detained for want of attendance or not fulfilled academic requirements or who have failed after having undergone the course in earlier regulations or have discontinued and wish to continue the course are eligible for admission into the unfinished semester from the date of commencement of class work with the same or equivalent subjects as and when subjects are offered, subject to Section 2 and they will follow the academic regulations into which they are readmitted.
- b. Candidates who are permitted to avail Gap Year shall be eligible for re-joining into the succeeding year of their B. Tech from the date of commencement of class work, subject to Section 2 and they will follow the academic regulations into which they are readmitted.

23. Student Transfers: Student transfers shall be as per the guidelines issued by the Government of Andhra Pradesh and the Universities from time to time.

24. General Instructions:

- a. The academic regulations should be read as a whole for purpose of any interpretation.
- b. Malpractices rules-nature and punishments are appended.
- c. Where the words “he”, “him”, “his”, occur in the regulations, they also include “she”, “her”, “hers”, respectively.
- d. In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Principal is final.
- e. The Institution may change or amend the academic regulations or syllabi at any time and the changes or amendments shall be made applicable to all the students on rolls with effect from the dates notified by the Institution.
- f. In the case of any doubt or ambiguity in the interpretation of the guidelines given, the decision of the Principal is final.

**ACADEMIC REGULATIONS (R23) FOR B.TECH.
(LATERAL ENTRY SCHEME)**

(Effective for the students getting admitted into II year through Lateral Entry Scheme from the Academic Year 2024-2025 onwards)

1. Award of the Degree:

- (a) **Award of the B.Tech. Degree / B.Tech. Degree with a Minor:** A student will be declared eligible for the award of the B.Tech. Degree / B.Tech. Degree with Honors if he/she fulfils the following:
- (i) Pursues a course of study for not less than three academic years and not more than six academic years. However, for the students availing Gap year facility this period shall be extended by two years at the most and these two years would in addition to the maximum period permitted for graduation (Six years).
 - (ii) Registers for 120 credits and secures all 120 credits.
- (c) **Award of B.Tech. degree with Honors:** A student will be declared eligible for the award of the B.Tech. with Honors if he/she fulfils the following:
- (i) Student secures additional 15 credits fulfilling all the requisites of a B.Tech. program i.e., 120 credits.
 - (ii) Registering for Honors is optional.
 - (iii) Honors is to be completed simultaneously with B.Tech. programme.

2. Students, who fail to fulfil the requirement for the award of the degree within six consecutive academic years from the year of admission, shall forfeit their seat.

3. **Minimum Academic Requirements:** The following academic requirements have to be satisfied in addition to the requirements mentioned in item no.2

- i. A student shall be deemed to have satisfied the minimum academic requirements and earned the credits allotted to each theory, practical, design, drawing subject or project if he secures not less than 35% of marks in the end examination and a minimum of 40% of marks in the sum total of the mid semester evaluation and endexamination taken together.
- ii. A student shall be promoted from III year to IV year if he/she fulfils the academic requirements of securing 40% of the credits (any decimal fraction should be rounded off to lower digit) in the subjects that have been studied up to V semester. And in case if student is already detained for want of credits for particular academic year, the student may make up the credits through supplementary exams of the above exams before the commencement of IV year I semester class work of next year.

4. **Course Pattern:**

- i) The entire course of study is three academic years on semester pattern.
- ii) A student eligible to appear for the end examination in a subject but absent at it or has failed in the end examination may appear for that subject at the next supplementary examination offered.
- iii) When a student is detained due to lack of credits/shortage of attendance the student may be re-admitted when the semester is offered after fulfilment of academic regulations, the student shall be in the academic regulations into which he/she is readmitted.

5. Award of Class:

After a student has satisfied the requirement prescribed for the completion of the program and is eligible for the award of B.Tech Degree, he shall be placed in one of the following four classes:

Class Awarded	CGPA to be secured	From the CGPA secured from 120 Credits from II Year to IV Year
First Class with Distinction	≥ 7.5 (without any backlogs)	
First Class	≥ 6.5	
Second Class	≥ 5.5 to < 6.5	
Pass Class	≥ 4.5 to < 5.5	

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