



ADITYA ENGINEERING COLLEGE (A)

Aditya Nagar, ADB Road, Surampalem

Academic Regulations (AR23) for B. Tech (Regular-Full time)

(Effective for the students admitted into I year from the AY 2023- 24 onwards)

1. Award of the Degree

- (a) Award of the B.Tech. Degree / B.Tech. Degree with a Minor 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 be in addition to the maximum period permitted for graduation (Eight years).
 - (ii) Registers for 160 credits and secures all 160 credits.
 - (iii) A student shall be eligible for the award of B.Tech Degree with minor if the students earn 18 credits in addition to the 160 credits .
- (b) **Award of B.Tech. degree 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.

2. 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 1 a) i).

3. Admissions

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.

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. Semester/Credits:

- i) A semester comprises 90 working days and an academic year is divided into two semesters.
- ii) The summer term is for eight weeks during summer vacation. Internship/ apprenticeship / work-based vocational education and training can be carried out during the summer term, especially by students who wish to exit after two semesters or four semesters of study.
- iii) Regular courses may also be completed well in advance through MOOCs satisfying prerequisites.

6. 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 Courses (HSMC)	13	8 %	8 – 9%
2	Basic Sciences Courses (BSC)	20	13 %	12 – 16%
3	Engineering Sciences Courses (ESC)	23.5	14%	10 – 18%
4	Professional Core Courses (PCC)	54.5	34 %	30 – 36%
5	Electives – Professional (PEC) & Open (OEC); 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	–

7. 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 Courses	Foundation courses	Includes Mathematics, Physics and Chemistry; fundamental engineering courses; humanities, social sciences and management courses
2	Core Courses	Professional Core Courses (PCC)	Includes courses related to the parent discipline /department /branch of Engineering
3	Elective Courses	Professional Elective Courses (PEC)	Includes elective courses related to the parent discipline/department/ branch of Engineering
		Open Elective Courses (OEC)	Elective courses which include interdisciplinary courses or courses in an area outside the parent discipline/ department/ branch of Engineering
		Domain specific skill enhancement courses (SEC)	interdisciplinary/job-oriented/domain courses 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 courses of developing desired attitude among the learners

8. Programme Pattern

- i. Total duration of the of B. Tech (Regular) Programme is four academic years.
- ii. Each academic year of study is divided into two semesters.
- iii. Minimum number of instruction days in each semester is 90 days.
- iv. There shall be mandatory student induction program for freshers, with a 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.
- v. Health/wellness/yoga/sports and NSS /NCC /Scouts & Guides / Community service activities are made mandatory as credit courses for all the undergraduate students.
- vi. Courses like Environmental Sciences, Constitution of India, Essence of Indian Traditional Knowledge, Biology for Engineers, Professional Ethics and Human Values, IPR. Research and Technical Paper Writing etc. are offered as non-credit mandatory courses for all the undergraduate students.
- vii. Design Thinking for Innovation & Tinkering Labs are made mandatory as credit courses for all the undergraduate students.
- viii. Increased flexibility for students through an increase in the elective component of the curriculum, with 05 Professional Elective courses and 04 Open Elective courses.

- ix. 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.
- x. A total of 04 Open Electives are offered in the curriculum. A student can complete the requirement for B.Tech. Degree with 160 credits by opting for the courses offered through various verticals/tracks under Open Electives.
- xi. While choosing the electives, students shall ensure that they do not opt for the courses with syllabus contents similar to courses already pursued.
- xii. 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.
- xiii. Students shall undergo mandatory summer internships, for a minimum of eight weeks duration at the end of the second and third year of the programme.
- xiv. There shall also be mandatory full internship in the final semester of the programme along with the project work.
- xv. Undergraduate degree with Honors is introduced by the University for the students having good academic record.
- xvi. The college shall provide remote access to labs in various disciplines of Engineering through Virtual Labs (<https://www.vlab.co.in>) and will help student in learning basic and advanced concept through remote experimentation. Students shall be made to work on virtual lab experiments during the regular labs.
- xvii. The 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.
- xviii. Preferably 25% of course work for the theory courses in every semester shall be conducted in the blended mode of learning.

9. Evaluation Process

The performance of a student in each semester shall be evaluated course wise with a maximum of 100 marks for theory course and 100 marks for practical course. Summer Internships shall be evaluated for 50 marks, Full Internship & Project work in final semester shall be evaluated for 200 marks and mandatory courses with no credits shall be evaluated for 30 Sessional marks.

A student has to secure not less than 35% of marks in the Semester End Examination (SEE) and a minimum of 40% of marks in the sum total of the Sessional marks and Semester End Examination (SEE) marks taken together for the theory, practical, design, drawing course or project etc. In the case of a mandatory course, he/she should secure 40% of the total marks.

9.1 Theory Courses

Assessment Method	Marks
Continuous Internal Evaluation	30
Semester End Examination	70
Total	100

- i) For theory course, the distribution shall be 30 marks for Continuous Internal Evaluation and 70 marks for the Semester End Examination.
- ii) For practical course, the distribution shall be 30 marks for Continuous Internal Evaluation and 70 marks for the Semester End Examination.
- iii) If any course contains two different branch subjects, the syllabus shall be written into two parts with 3 units each (Part-A and Part-B) and external examination question paper shall be set with two parts each for 35 marks.
- iv) If any course has both theory and practical components, they will be evaluated separately as theory course and practical course. The student has to pass theory and lab examination simultaneously. Otherwise, the student has to appear for supplementary examination for both theory and lab.

a) Continuous Internal Evaluation

- i) For theory courses, during the semester, there shall be two Sessional examinations. Each Sessional examination shall be evaluated for 30 marks of which 10 marks is for objective paper (20 minutes duration), 15 marks for descriptive paper (90 minutes duration) and 5 marks for assignment.
- ii) Objective paper shall contain 05 short answer questions with 2 marks each or maximum of 20 bits for 10 marks. Descriptive paper shall contain 3 either or type questions (totally six questions from 1 to 6) of which student has to answer one from each either-or type of questions. Each question carries 10 marks. The marks obtained in the descriptive paper are condensed to 15 marks.

Note:

- The objective paper shall be prepared in line with the quality of competitive examinations questions.
 - The descriptive paper shall contain 3 either or type questions of equal weightage of 10 marks. Any fraction shall be rounded off to the next higher mark.
 - The objective paper shall be conducted along with descriptive examination.
 - 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.
- iii) If the student is absent for the Sessional examination, no re-exam shall be conducted and the marks for the objective and descriptive paper shall be considered as zero.
 - iv) First Sessional examination shall be conducted for I, II units of syllabus with one either or type question from each unit and third either or type question from both the units. The second Sessional examination shall be conducted for III, IV and V units with one either or type question from each unit. However, for any course having Part A and Part B, one Sessional examination is conducted in Part A syllabus and other Sessional examination is conducted in Part B syllabus.
 - v) Final Sessional marks shall be arrived at by considering the marks secured by the student in both the Sessional examinations with 80% weightage given to the

better Sessional exam and 20% to the other.

For Example:

Marks obtained in first Sessional: 25

Marks obtained in second Sessional: 20

Final Sessional Marks: $(25 \times 0.8) + (20 \times 0.2) = 24$

If the student is absent for any one Sessional examination, the final Sessional marks shall be arrived at by considering 80% weightage to the marks secured by the student in the appeared examination and zero to the other.

For Example:

Marks obtained in first Sessional: Absent

Marks obtained in second Sessional: 25

Final Sessional Marks: $(25 \times 0.8) + (0 \times 0.2) = 20$

b) Semester End Examination Evaluation:

End examination of theory courses shall have the following pattern:

- i) There shall be 6 questions and all questions are compulsory.
- ii) Question 1 shall contain 10 compulsory short answer questions for a total of 20 marks such that each question carries 2 marks.
- iii) There shall be 2 short answer questions from each unit.
- iv) In each of the questions from 2 to 6, there shall be either/or type questions of 10 marks each. Student shall answer any one of them.
- v) The questions from 2 to 6 shall be set by covering one unit of the syllabus for each question.
- vi) End examination of theory courses 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.

9.2 Practical Courses

Assessment Method	Marks
Continuous Internal Evaluation	30
Semester End Examination	70
Total	100

- a) For practical courses, there shall be a Continuous Internal Evaluation during the semester for 30 Sessional marks and Semester End Examination shall be for 70 marks.
- b) Day-to-day work in the laboratory shall be evaluated for 15 marks by the

concerned laboratory teacher based on the record/viva and 15 marks for the test.

- c) The Semester End Examination shall be evaluated for 70 marks, conducted by the concerned laboratory teacher and a senior expert in the course from the same department.
- Procedure: 20 marks
 - Experimental work & Results: 30 marks
 - Viva voce: 20 marks.

In a practical course consisting of two parts (Eg: Basic Electrical & Electronics Engineering Lab), the Semester end examination shall be conducted for 70 marks as a single laboratory in 3 hours. Sessional examination shall be evaluated as above for 30 marks in each part and final Sessional marks shall be arrived by considering the average of marks obtained in two parts.

9.3 Design/Drawing Courses: For the course having design and/or drawing, such as Engineering Drawing, the distribution of marks shall be 30 for Sessional evaluation and 70 for Semester End Examination.

Assessment Method	Marks
Continuous Internal Evaluation	30
Semester End Examination	70
Total	100

- a) Day-to-day work shall be evaluated for 15 marks by the concerned course teacher based on the reports/submissions prepared in the class. And there shall be two Sessional examinations in a semester for duration of 2 hours each for 15 marks with weightage of 80% to better Sessional marks and 20% for the other. The descriptive paper shall contain 3 either or type questions of equal weightage of 5 marks. There shall be no objective paper in the Sessional examination. The sum of day-to-day evaluation and the Sessional marks will be the final sessional marks for the course.
- b) The end examination pattern for Engineering Graphics, shall consist of 5 questions, either/or type, of 14 marks each. There shall be no objective type questions in the end examination. However, the end examination pattern for other courses related to design/drawing, multiple branches etc is mentioned along with the syllabus.

9.4 Mandatory Courses:

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 Sessional examinations. In case the student fails, a re-examination shall be conducted for failed candidates for 30 marks satisfying the conditions mentioned in item 1 & 2 of the regulations.

9.5 Skill oriented Courses

- a) There shall be five skill-oriented courses offered during III to VII semesters.
- b) 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.

- c) 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/Sessional test. The end examination similar to the practical examination pattern shall be conducted by the concerned teacher and an expert in the course appointed by the Principal.
- d) 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 senior Faculty member nominated by the Head of the Department shall monitor the evaluation process. The marks/grades shall be assigned to the students by the above committee based on their performance.
- e) 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 grades/marks given for a course by external agencies and convert to the equivalent marks/grades.
- f) The recommended courses offered by external agencies, conversions and appropriate grades/marks are to be approved by the Principal at the beginning of the semester.
- g) 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.

9.6 Massive Open Online Courses (MOOCs):

- a) A Student has to pursue and complete one course compulsorily through MOOCs. 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.
- b) 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. The examination fee, if any, will be borne by the student.
- c) Students who have qualified in the proctored examinations conducted through MOOCs platform can apply for credit transfer as specified and are exempted from appearing Sessional Examination as well as Semester End Examination (for the specified equivalent credit course only).
- d) Necessary amendments to the rules and regulations regarding adoption of MOOC courses would be proposed from time to time.

9.7 Mandatory Internships

Summer Internships: 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. It shall be completed in collaboration with local industries, Govt. Organizations, construction agencies, Power projects, software MNCs or any industries in the areas of concerned specialization of the Undergraduate program. One of the two summer internships at the end of second year (Community Service Project) shall be society oriented and shall be completed in collaboration with government organizations/NGOs & others. The other internship at the end of third year is Industry Internship and shall be completed in collaboration with

Industries. The student shall register for the internship as per course structure after commencement of academic year.

Evaluation of the summer internships shall be through the departmental committee. 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. A certificate of successful completion from industry shall

be included in the report. The report and the oral presentation shall carry 50% weightage each. It shall be evaluated for 50 external marks. There shall be no internal marks for Summer Internship. A student shall secure a minimum of 40% of marks for successful completion. In case a student fails, he/she shall reappear as and when semester supplementary examinations are conducted.

A Community Service Project (CSP): A CSP is to be carried out by each student individually (or) as a team for 120 hours during the summer break of II semester.

The CSP shall be evaluated for 100 marks at the end of III semester based on the report submitted and an oral presentation. The report carries 75 marks and oral presentation carries 25 marks. The student should appear for the oral presentation before the Project Review Committee (PRC). The PRC consists of HOD, Supervisor and a Senior faculty member of the department.

The students have to identify social problems existing in any geographical area / village and try to solve them technically or suggest to people, the necessary solution for solving these problems. The different areas under CSP could be like Agricultural, Health, Animal Husbandry, Horticulture, Fisheries, Revenue and Survey, Natural Disaster Management, Irrigation, Law & Order, Excise & Prohibition etc. For example, department of Computer Science students can take up activities related to computer literacy to different section of people. After successful completion, students shall submit a detailed report to the department concerned.

A student has to secure at least 40% of marks for Satisfactory grade, Otherwise the student shall reappear for the examination when conducted next. There shall be no external evaluation.

Full Semester Internship and Project work: 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. At the end of the semester the candidate shall submit an internship completion certificate and a project report. A student shall also be permitted to submit a project report on the work carried out during the internship.

The project report shall be evaluated by an external examiner. The total marks for project work is 200 marks and distribution shall be 60 marks for internal and 140 marks for external evaluation. The supervisor assesses the student for 30 marks (Report: 15 marks, Seminar: 15 marks). 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. The external evaluation of Project Work is a Viva-Voce Examination conducted in the presence of an internal examiner and external examiner appointed by the Principal and is evaluated for 140 marks.

The HoD shall monitor the student internship programs. Completion of internships is mandatory. If any student fails to complete the internship, he will not be eligible for the award of degree. In such cases, the student shall repeat and complete the internship.

Note: The laboratory records and Sessional test papers shall be preserved for a

minimum of 3 years in the institution as per the norms.

10 Credit Transfer Policy

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 Institution 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) 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.
- ii) Student registration for the MOOCs shall be only through the respective department of the institution and it is mandatory for the student to share necessary information with the department.
- iii) The credit transfer policy will be applicable to the Professional & Open Elective courses only.
- iv) The concerned department shall identify the courses permitted for credit transfer.
- v) The Institution shall notify at the beginning of semester the list of the online learning courses eligible for credit transfer.
- vi) The Institution shall designate a faculty member as a Mentor for each course to guide the students from registration till completion of the credit course.
- vii) The Institution shall ensure no overlap of MOOC exams with that of the regular examination schedule. In case of delay in results, the Institution will re-issue the marks sheet for such students.
- viii) Students 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.
- ix) The Head of the Department shall submit the following to the examination centre :
 - a) List of students who have passed MOOC courses in the current semester along with the certificate of completion.
 - b) Undertaking forms filled in by the students for credit transfer.
- x) The Institution shall resolve any issues that may arise in the implementation of this policy from time to time and shall review its credit transfer policy in the light of periodic changes brought by UGC, SWAYAM, NPTEL, state government and AEC.

Note: Students shall be permitted to register for MOOCs offered through online platforms approved by the Institution from time to time.

11 Academic Bank of Credits (ABC)

The Institution has implemented 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.

12 Guidelines for offering a Minor

A Student has to acquire 18 more credits, in addition to 160 credits required, for the award of the minor by fulfilling at least THREE credits must be earned from NPTEL/SWAYAM MOOC Course and the remaining 15 credits by doing FIVE Theory/Integrated courses of 03 credits each 1.5 Credits either through MOOCs/Regular. The department concerned will determine the required courses for award of minor. The subjects in minor programme would be a combination of mostly core and some electives.

12.1 The objectives of initiating the minor certification are:

- i) To diversify the knowledge of the undergraduates.
- ii) To make the undergraduates more employable.
- iii) To have more educational and professional skills after the completion of his undergraduate courses.
- iv) To give a scope to specialize students in other streams of engineering in addition to the ones they are currently pursuing.

12.2 Applicability and Enrolment:

- i) To all B.Tech (Regular and Lateral Entry) students admitted in Engineering & Technology.
- ii) There shall be no limit on the number of programs offered under Minor. The minor programs in emerging technologies are based on expertise in the respective departments and may also be offered in collaboration with the relevant industries/agencies.
- iii) If a minimum enrolments criterion is not met, then the students may be permitted to register for the equivalent MOOC courses as approved by the concerned Head of the department in consultation with BoS.
- iv) For applicability of minor, both regular B Tech and minor courses shall be successfully completed.
- v) Transfer of credits from a particular minor to regular B. Tech or another major degree and vice-versa shall not be permitted.

12.3 Entry Level:

- i) The B. Tech students (both Regular and Lateral Entry) pursuing a major degree programme can register for minor at their choice in any other department offering minor from IV semester onwards.
- ii) Students registering for minor shall select the subjects from other branches. For example, if a student pursuing major degree in Electrical & Electronics Engineering shall select the subjects specified for minor in Civil Engineering and he/she will get major degree of Electrical & Electronics Engineering with minor of Civil Engineering.
- iii) Student pursuing major degree in any engineering branch is eligible to register for minor in any other engineering branch. However, students pursuing major degree in a particular Engineering are not allowed to register for minor in the same engineering branch.
- iv) Separate CGPA shall be shown on semester and final transcripts of Regular B. Tech and minor.
- v) Students shall be permitted to select a maximum of two subjects per semester from the list of subjects specified for minor.
- vi) Minor shall not be awarded at any circumstances without completing the regular major B. Tech programme in which a student got admitted.
- vii) If a student is detained due to lack of attendance, he/she shall not be permitted to register the courses of minor.
- viii) Students completed their degree shall not be permitted to register for minor.

12.4 Structure of Minor in B. Tech

- i) The student shall earn additional 18 Credits for award of minor from other branch/department/discipline registered for major degree.
- ii) Students can complete minor courses either in the college or in online from platforms like NPTEL/SWAYAM etc.
- iii) The overall attendance in each semester of regular B. Tech courses and minor courses shall be computed separately.
- iv) Student having less than 65% attendance in minor courses shall not be permitted for appearing “Minor course(s) end semester examinations”.
- v) A student detained due to lack of attendance in a regular B. Tech programme shall not be permitted to continue minor programme.
- vi) The students may choose theory or practical courses to fulfil the minimum credit requirement.
- vii) The students may be allowed to take maximum of two subjects per semester pertaining to their minor.
- viii) Students shall not be permitted to register for minor degree after completion of VI semester.
- ix) The students are permitted to opt for only a single minor course in his/her entire tenure of B. Tech (Engineering).
- x) The students registered for B. Tech (Hons) shall not be permitted to register for minor
- xi) The student is not permitted to take the electives courses from the parent department to fulfil the minimum credit requirement.

12.5 Credits requirement:

- i) A Student will be eligible to get minor along with major degree engineering, if he/she completes an additional 18 credits. These may be acquired either in offline or online like NPTEL/SWAYAM etc.,
- ii) Additional credits shall also be acquired through NPTEL Courses, which shall be domain specific, with a minimum duration of 8/12/16 weeks (2/3/4 credits) as recommended by the Board of studies.
- iii) Students shall produce a certificate issued by the NPTEL/SWAYAM etc., conducting agency as a proof of credit attainment.
- iv) The minor courses syllabus, as approved by the Board of Studies, shall be delivered online by the concerned departments to students registered for the minor degree.
- v) After successful completion of all major and minor courses with specified CGPA the college will award both major and minors.

12.6 Procedure to Applying for the Minor:

- i) The department offering the minor will announce specialization and courses before the start of the session.
- ii) The interested students shall apply through the HOD of his/her parent department.
- iii) The concerned department will announce the list of the selected students for the minor.
- iv) The whole process should be completed within one week before the start of every session.
- v) Selected students shall be permitted to register the courses for minor.

12.7 Registering for minor courses:

- i) Each department offering the minor will submit the final list of selected students to the examination center.
- ii) The selected students shall submit a joining letter to the concerned HOD offering the minor. The student shall inform same to the HOD of his/her parent department.

- iii) Both parent department and department offering minor shall maintain the record of student pursuing the minor.
- iv) With the approval of HOD and suggestion of advisor, students can choose courses from the approved list and shall register the courses within the prescribed timeframe specified in the minor degree structure.
- v) The Examination Center shall release the sessional and Semester End Examination Time Table as per the prescribed schedule.
- vi) If the student wishes to withdraw/change the registration of subject/course, he/she shall inform the same to advisor, subject teacher, HODs of minor department and parent department and Principal within two weeks after registration of the course.

12.8 Procedure for Monitoring the Progress of the Scheme:

The students enrolled in the minor courses will be monitored continuously at par with the prevailing practices and examination standards. An advisor/mentor from parent department shall be assigned to a group of students to monitor the progress.

12.9 Allocation of seats for minor:

- i) The College will notify the number of seats for minor in the concerned department well in advance before the start of the semester.
- ii) Total number of seats offered for a minor programme shall be a maximum of 60 (based on merit).
- iii) The list of the electives for minor will be offered from the list of running majors in the concerned subjects.
- iv) There is no fee for registration of subjects for minor degree programme offered in offline at the respective colleges.

12.10 Examinations:

- i) The examination for the minor courses offered in offline shall be conducted along with regular B. Tech programme.
- ii) The examinations (CIE and SEE) and evaluation procedure of minor courses offered in offline is similar to regular B. Tech courses.
- iii) A separate transcript shall be issued for the minor subjects passed in each semester.
- iv) It may be noted that both major and minor courses (from IV sem to VII sem) are to be completed in 4 Years for Regular students and 3 years for lateral entry admitted students.
- v) Examinations Fees: Examination Fees will be as per the norms.
- vi) For awarding the class, CGPA obtained in Major Degree only will be considered.
- vii) For awarding the Minor, obtained credits only will be considered.

13 Guidelines for offering Honors

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) Honors 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.
- ii) A student shall earn an 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 Honors in IV semester after the results of III Semester are declared and students may be allowed to take maximum two courses per semester pertaining to the Honors from V Semester onwards.

- iv) The Institution shall arrange separate class work and timetable of the courses offered under Honors program.
- v) Courses that are used to fulfil the student's primary major may not be double counted towards the Honors. Courses with content substantially equivalent to courses in the student's primary Major may not be counted towards the Honors.
- vi) Students can complete the courses offered under Honors 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 Honors 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 Honors 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 Honors to be eligible for attending semester end examinations.
- ix) A student registered for Honors shall pass in all courses that constitute the requirement for the Honors degree program. No class/division (i.e., second class, first class and distinction, etc.) shall be awarded for an Honors degree programme.
- x) If a student drops or is terminated from the Honors 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 Honors will be mentioned in the degree certificate as Bachelor of Technology (Honors) in XYZ. For example, B.Tech. (Honors) in Mechanical Engineering

13.1 Enrolment into Honors:

- i) Students of a Department/Discipline are eligible to opt for Honors program offered by the same Department/Discipline.
- ii) The enrolment of students into Honors 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
- iii) having 7 CGPA without any backlog courses will be permitted to register for Honors.
- iv) If a student is detained due to lack of attendance either in Major or in Honors, registration shall be cancelled.
- v) Transfer of credits from Honors to regular B. Tech degree and vice-versa shall not be permitted.
- vi) Honors is to be completed simultaneously with a Major degree program.

13.2 Registration for Honors:

- i) The eligible and interested students shall apply to the HOD of his/her parent department. The whole process shall be completed within one week before the start of every semester. Selected students shall be permitted to register for the courses under Honors.
- ii) The selected students shall submit their willingness to the HoD of his/her parent department offering Honors. The parent department shall maintain the record of students pursuing the Honors.
- iii) The students enrolled in the Honors courses will be monitored continuously. An advisor/mentor from the parent department shall be assigned to a group of students to monitor the progress.
- iv) There is no fee for registration of courses for Honors program offered offline in the institution.

14 Attendance Requirements:

- i) A student shall be eligible to appear for the Semester End Examinations if he/she

acquires a minimum of 40% attendance in each course and 75% of attendance in aggregate of all the courses. 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 Institution.
- iv) Students whose shortage of attendance is not condoned in any semester are not eligible to take their Semester End Examination of that semester and their registration shall be 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.

15 Promotion Rules:

- i) The following academic requirements must be satisfied in addition to the attendance requirements mentioned in section 14.
- ii) A student shall be promoted from first year to second year if he/she fulfils the minimum attendance requirement as per norms.
- iii) 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) in the courses that have been studied up to III semester.
- iii) 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 courses that have been studied up to V semester.
- iv) 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.
- v) 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.

16 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.

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, E, F and Ab.

Structure of Grading of Academic Performance

Percentage of marks in a course	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)	5
< 40	F (Fail)	0
Absent	Ab (Absent)	0

- i) A student obtaining Grade 'F' or Grade 'Ab' in a course shall be considered failed and will be required to reappear for that course when it is offered during the next supplementary examination.
- ii) For non-credit mandatory 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.,

$$SGPA = \sum (C_i \times G_i) / \sum C_i$$

where, C_i is the number of credits of the i th course 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.,

$$CGPA = \sum (C_i \times S_i) / \sum C_i$$

where " S_i " is the SGPA of the i th semester and C_i is the total number of credits upto that semester.

Both SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

While computing the SGPA the courses in which the student is awarded Zero grade points will also be included.

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	$\geq 5.0 < 5.5$

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

17 With-holding of Results

If the student has any dues in the Institution or is involved in any indiscipline or malpractice or court cases, his result shall be withheld.

18 Multiple Entry / Exit Option

(a) Exit Policy:

The students can choose to exit the four-year programme at the end of first/second/third year.

- 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 as per the University Guidelines.

Note: The University 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.

19 Gap Year Concept:

Gap year concept for Student Entrepreneur in Residence is introduced and outstanding students who wish to pursue entrepreneurship / become entrepreneur are allowed to take a break of one year at any time after II year to pursue full-time entrepreneurship programme/to establish startups. This period may be extended to two years at the most and these two years would not be counted for the maximum time allowed for graduation. An evaluation committee constituted by the Principal shall evaluate the proposal submitted by the student and the committee shall decide

whether to permit the students to avail the Gap Year or not.

20 Transitory Regulations

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 courses as and when courses are offered, subject to Section 2 and they will follow the academic regulations into which they are readmitted.

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.

21 Minimum Instruction Days for a Semester:

The minimum instruction days including exams for each semester shall be 90 days.

22 Medium of Instruction:

The medium of instruction of the entire B. Tech undergraduate programme in Engineering (including examinations and project reports) will be in English only.

23 Student Transfers:

Student transfers shall be as per the guidelines issued by the Government of Andhra Pradesh and the University from time to time.

24 General Instructions:

- i. The academic regulations should be read as a whole for purpose of any interpretation.
- ii. Malpractices rules-nature and punishments are appended.
- iii. Where the words “he”, “him”, “his”, occur in the regulations, they also include “she”, “her”, “hers”, respectively.
- iv. In the case of any doubt or ambiguity in the interpretation of the above rules/guidelines, the decision of the Academic Council is final.
- v. 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.

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Academic Regulations (AR23) for B. Tech (Lateral Entry)

*(Effective for the students admitted into II year through Lateral Entry Scheme from the
AY 2024-25 onwards)*

1. Award of the Degree

- (a) Award of the B.Tech. Degree / B.Tech. Degree with a Minor 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 be in addition to the maximum period permitted for graduation (Six years).
 - (ii) Registers for 120 credits and secures all 120 credits.
- (b) **Award of B.Tech. degree 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 course 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 Sessional 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 courses 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 course but absent at it or has failed in the end examination may appear for that course 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.

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

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