

# ACADEMIC REGULATIONS FOR B.TECH PROGRAMME UNDER AUTONOMOUS STATUS

*(W.E.F. THE ADMITTED BATCH OF 2020-21)*

## **I. Admissions:**

Admissions into first year of B.Tech programme and admissions into second year (lateral entry) of B.Tech programme of the Institute will be as per the norms stipulated by Andhra University & Andhra Pradesh State Council for Higher Education (APSCHE), Govt. of Andhra Pradesh. The academic regulations mentioned herewith will be applicable from 2021-22 in case of Lateral Entry admissions.

## **II. Programmes Offered:**

The following are the B.Tech programmes offered by the Institute.

- 1 Chemical Engineering
- 2 Civil Engineering
- 3 Computer Science & Engineering
- 4 Electrical & Electronics Engineering
- 5 Electronics & Communication Engineering
- 6 Information Technology
- 7 Mechanical Engineering
- 8 Computer Science & Engineering(Data Science)
- 9 Computer Science & Engineering(AIML)

## **III. Structure of the B. Tech. Programme:**

The programme consists of Humanities, Basic Sciences, Engineering Sciences and Technology courses. The complete programme is distributed over eight semesters with two semesters per academic year. Every branch of B.Tech programme will have a curriculum and syllabi for the courses recommended by the Board of Studies and approved by the Academic Council. The academic programmes of the Institute follow the credit system. The curriculum of B.Tech programme is designed to have a total of 160 credits of which a student should acquire all 160 credits to get the degree awarded and to determine the final CGPA. The lateral entrants shall have a total of 122 credits of which one should acquire all 122 credits to get the degree awarded and to determine the final CGPA.

### **(A) Criteria for achieving the minimum credits:**

#### **Mandatory credit courses**

All courses mentioned in the programme excluding open electives, professional electives and MOOCS comes under mandatory courses.

#### **Open Elective**

Open elective is a course offered by any other department than home department and the student has to choose elective offered by other departments as and when offered by the department.

#### **Emerging Subjects**

To make the students abreast with the latest technological developments, the departments also offer emerging subjects in the curriculum.

### **Professional Electives**

The student has to register for professional electives as offered by the department during the programme as per his choice and as provided in the curriculum.

### **MOOCs- Massive Open Online Courses**

The student can register for MOOCs course as per the curriculum designed and as and when scheduled by the department.

### **Mandatory Non Credit Courses**

In order to enhance the life skills of the students and acquaint them with general awareness in multi disciplinary fields, mandatory non credit courses were designed which will have student engagement with faculty but does not carry any credits. Induction programmes, courses such as Professional Ethics, Environmental Studies etc., are categorized as Mandatory non credit courses. Grade will be indicated as successfully completed / not completed.

### **NCC**

Based on the AICTE guidelines, NCC will be considered as a 3 credit open elective course. Any student he / she, completes the NCC course as stipulated by concerned authority will be considered as successfully completed the course and 3 credits will be given in the 8th semester.

### **Value added courses:**

A candidate has to successfully complete the Value Added Courses offered by the individual departments, for which no credits are awarded. Grade will be indicated as successfully completed / not completed.

### **NSS**

Students will be encouraged to register for National Service Scheme (NSS) activities. Grade shall be awarded as successfully completed / not completed in the grade sheet on the basis of participation, attendance, performance and behaviour. The NSS programme will be held as announced by the respective Coordinator (s).

### **Mandatory Internship framework:**

Students shall undergo mandatory summer internships for a minimum of six weeks duration at the end of second and third year of the Programme.

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. The report and the oral presentation shall carry 40% and 60% weightage respectively.

There shall also be mandatory full internship in the final semester of the Programme. In the final semester, the student should mandatorily undergo internship and parallelly 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 project report on the work carried out during the internship.

In case of unforeseen situation like COVID etc., causing limitations in industry, and if student fails to get an opportunity for internship, he /she may be permitted to complete a skill oriented course pertaining to industry with the approval of concerned department.

**Gap - Year:**

Gap Year-concept of Student Entrepreneur in Residence shall be introduced and outstanding students who wish to pursue entrepreneurship are allowed to take a break of one year at any time after I year / II year / III year to pursue entrepreneurship full time. This period shall be counted for the maximum time for graduation. An evaluation committee at institute level shall be constituted to evaluate the proposal submitted by the student and the committee shall decide on permitting the student for availing the Gap Year.

**For the award of the degree**, the student has to secure a minimum pass grade or above in all the mandatory courses, registered open electives, emerging subjects, MOOCS, registered professional electives.

**(B) Honors/ Minor Programme framework:**

- i) A candidate shall be eligible to register for Honor or Minor degree along with regular B.Tech degree. A candidate shall earn 20 credits in addition to the 160 credits to get Honor / Minor degree along with regular B.Tech degree. A candidate shall be permitted to register either for Honors or for Minor and not for both simultaneously.
- ii) A candidate shall be permitted to register for Honors / Minor program at the beginning of 4th semester subject to a maximum of two additional courses per semester, provided that the student must have acquired a minimum of 8.00 CGPA up to the end of 2nd semester without any backlogs. In case of the declaration of the 3rd semester results after the commencement of the 4th semester and if a candidate fails to score the required minimum of 8.00 CGPA, his/her registration for Honors / Minor Programme stands cancelled and he/she shall continue with the regular Programme.
- iii) In case a student fails to meet the CGPA requirement for Degree with Honors / Minor at any point after registration, he/she will be dropped from the list of students eligible for Degree with Honors / Minors and they will receive regular B.Tech degree only. However, such students will receive a separate grade sheet mentioning the additional courses completed by them.
- iv) Honors / Minor must be completed simultaneously with a major degree program. A student cannot earn Honors/ Minor after he/she has already earned bachelor's degree.
- v) A Candidate is eligible to opt for Honors Programme offered by the concerned Department/Discipline and he/she will be awarded B.Tech. (Honors) in the concerned Discipline.

- vi) Candidates who are desirous of pursuing their special interest areas in chosen discipline of Engineering may opt for additional courses in minor specialization groups (Specialized Tracks) offered by the concerned department and he/she will get Major degree of concerned Discipline with minor degree of Specialized Track.
- vii) Candidates who are desirous of pursuing their special interest areas other than the chosen discipline of Engineering may opt for additional courses in minor specialization groups (General Tracks) offered by the department other than their parent department and he/she will get Major degree of concerned Discipline with minor degree in other department.
- viii) Candidates can also opt for Industry relevant track so any branch like Data Mining track, IOT track, Machine learning track etc., or industry track such as Artificial Intelligence (AI), Machine Learning (ML), Data Science (DS), Robotics, Electric vehicles, VLSI etc. to obtain the Minor Degree and he/she will get Major degree of concerned discipline with minor degree in industry track.
- ix) In the case of Honors, out of 20 additional Credits to be acquired, 16 credits shall be earned by undergoing specified courses listed as pools, with four courses, each carrying 4 credits. The remaining 4 credits must be acquired through two MOOCs courses, which shall be domain specific, each with 2 credits and with a minimum duration of 8 weeks as recommended by the Board of studies. If the MOOC course is a pass course without any grades, the grade to be assigned as decided by the Academic Council.
- x) In the case of Minor, out of 20 additional Credits to be acquired, 16 credits shall be earned by undergoing specified courses listed by the concerned departments along with prerequisites. It is the responsibility of the student to acquire/complete prerequisite before taking the respective course. A student shall be permitted to choose only those courses that he/she has not studied in any form during the Programme. The remaining 4 credits must be acquired through two MOOCs courses. The courses must be of minimum 8 weeks in duration. Student has to acquire a certificate from the agencies approved by the BoS with grading or marks or pass. If the MOOC course is a pass course without any grades, the grade to be assigned as decided by the Academic Council.
- xi) If a candidate drops (or terminated) from the Honors / Minor program, they cannot convert the earned credits into free or core electives; they will remain extra. These additional courses will find mention in the transcript (but not in the degree certificate). In such cases, the student may choose between the actual grade or a "pass (P)" grade and also choose to omit the mention of the course as for the following: All the courses successfully completed under the dropped Minors will be shown in the transcript. Courses which were not completed under the dropped Minor will not be shown in the transcript.

**The credit contribution of these additional subjects to the computation of CGPA, however, would be considered as nil.**

For offering Honors / Minor courses in any department as regular course work minimum 10 and 20 candidates are to be enrolled respectively. Else the courses are to be completed by MOOCS courses as suggested in the AICTE / APSCHE guidelines.

**IV. Duration of the Programme:**

The duration of the programme is four academic years consisting of two semesters in each academic year. A student is permitted to complete the programme in a stipulated time frame of 8 consecutive academic years from the date of initial admission. Students joining the programme in the 2nd year through lateral entry scheme shall have to complete the programme in a stipulated time frame of 6 consecutive academic years from the date of initial admission.

**V. Medium of Instruction:**

The medium of instruction and examination is English.

**VI. Minimum Instruction Days:**

Each semester normally consists of a minimum of 16 weeks of instruction.

**VII. Academic Calendar:**

The dates of all important events, such as commencement of class work, examinations, vacations, etc., during the academic year will be specified in the Academic Calendar of the Institute.

**VIII. Examinations & Evaluation Process:**

The performance of a student in each semester shall be evaluated subject-wise with a maximum of 100 marks each for theory and practical/ drawing subjects.

**(A) Theory Course:**

For all lecture based theory courses, the assessment shall be for 40 marks through internal evaluation and 60 marks through external semester-end examination.

**Internal evaluation:**

The sessional marks shall be awarded through internal evaluation by the teachers concerned based on the continuous assessment which includes class tests, quiz, viva-voce, assignments, student regularity, two mid-examinations etc., according to a scheme notified by the department at the beginning of the semester.

Out of the 40 internal evaluation marks, 20 marks are assigned for 2 internal-mid exams, 10 marks for assignments, 5 marks for projects/ case studies /quiz/tests and 5 marks for attendance. Weighted average of 2 internal-mid exams is considered for the 20 marks allocated.

Under any circumstances, no re-examination shall be conducted for the internal mid examinations.

**External evaluation:**

The question paper shall be set externally and the answer scripts are valued through a double valuation system.

The average of the two valuations will be taken for the award of marks. In case, the difference of the marks obtained in the two valuations is more than 20%, then a third examiner shall value the script. Out of the three valuations, the average of marks obtained in third valuation and the marks obtained nearer to third valuation out of first two valuations shall be considered. No revaluation for any subject/course shall be entertained as already double valuation system is in existence. However, recounting is allowed on the request of the candidate on payment of specified fee. Challenge valuation shall also be entertained on payment of specified fee.

**Laboratory Course:**

Each student will perform about 10 to 12 experiments in each laboratory course. Laboratory course will be evaluated for 100 marks, out of which 50 marks are for external examination and 50 marks are for internal evaluation. The internal marks are awarded based on continuous assessment, record work, internal lab examination and student regularity. The external examination will be conducted by two examiners, one of them being laboratory class teacher as internal examiner (nominated by the Principal on recommendation of HOD) and an external examiner nominated by the Principal from the panel of experts recommended by the HOD.

A candidate shall be declared to have passed any theory subject/ course if he secures not less than 40% in external theory examination and also a minimum of 40% of total marks of that course which assures a minimum of 'P' grade.

A candidate shall be declared to have passed any practical course if he secures not less than 50% in external laboratory examination and also a minimum of 50% of total marks of that course which assures a minimum of 'C' grade.

Only in the case of quantitative and verbal aptitude – I & II, if a candidate fails he is given an opportunity to improve to pass grade (P) irrespective of the score he gets over and above pass mark in the re-examination within one month on payment of special examination fee.

Any student appearing for the semester-end practical examination is eligible only if he submits the bonafide record certified by the laboratory class teacher and the HOD.

**Project Work:**

The project work is evaluated through internal assessment in the IV Year I semester through continuous assessment process and a final evaluation by a committee nominated by the HOD. In IV year II semester, the assessment process consists of both internal and external evaluation. The internal evaluation will be done through continuous assessment process and the external evaluation will be done by a duly constituted committee consisting of at least one external expert nominated by the Principal. If a student fails in the fourth year first semester project he has to appear for re-assessment within one month for which he has to pay the re-examination fee if any.

**Industrial Training / internship:**

The industrial training / internship is assessed internally for 100 marks by an internal evaluation committee constituted by the HOD.

**Supplementary Exams:**

There will be supplementary examination for the programme such that for even semester courses the supplementary exams will be conducted during summer vacation and for the odd semester courses, the supplementary exams will be conducted during the winter vacation.

**IX. Attendance Regulations:**

Attendance of a student is computed by considering total number of periods conducted in all courses as the denominator and the total number of periods actually attended by the student in all courses, as the numerator. It is desirable for a student to put in 100% attendance in all the subjects. However, a candidate shall be permitted to appear for the semester end examination provided he maintains a minimum of 75% overall attendance in the semester.

The shortage of attendance on medical grounds can be condoned up to a maximum of 9% provided the student puts in at least 66% attendance and provided the Principal is satisfied with the genuineness of the reasons. The Medical Certificates are to be submitted to the Head of the Department when the candidate reports to the classes immediately after the absence. Certificates submitted afterwards shall not be entertained. Condonation fee as fixed by the institute for those who put in attendance greater than 66% and less than 75% shall be charged before the semester-end examinations.

In the case of students who participate in co-curricular, extra-curricular activities like student seminars, N.S.S, N.C.C, Inter-collegiate tournaments and any such other activities involving the representation of the Institute, with the prior approval of the Principal, the candidate may be deemed to have attended the classes during the actual period of such activity, solely for the purpose of attendance.

A student, who could not satisfy the minimum attendance requirement of 66% in any semester, shall be declared 'Detained'. He is not eligible to appear for the semester end examinations. He will not be promoted to the next semester and shall have to repeat that semester with the next batch(es) of students. Such students who are detained and seek readmission, should submit an undertaking/a declaration that they will abide by the regulations existing at the time of readmission.

### **Minimum Academic Requirements:**

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item No. IX.

A student shall be deemed to have satisfied the minimum academic requirements and earned the credits allotted to each theory subject if only he secures not less than 40% marks in the semester-end examination and a minimum of 40% marks in the sum of the internal evaluation and semester-end examination taken together. In the labs/ projects, the student should secure a minimum of 50% marks in the external examination and a minimum of 50% marks in the sum of internal evaluation and external examination evaluation taken together.

Further, a candidate has to secure a minimum of 40 % in theory examination (excluding sessional marks) and a minimum of 50 % (excluding sessional marks) in the Practical Examination / Project / Field Work / Viva Voce / Industrial Training in Semester –End / Year - End Examination and 50% aggregate to pass.

A student will be promoted to the next semester, if only he satisfies the minimum attendance requirement. Further the student should also satisfy minimum credit requirement to be promoted to III Year or to IV year as per the norms given below.

A student shall be promoted from II Year to III Year only if he fulfills the academic requirement of total 40 % of all credits from regular and supplementary examinations of I Year and II Year – I Semester {i.e., total 3 semesters} examinations, irrespective of whether the candidate takes the examination in all the subjects or not.

A student shall be promoted from III Year to IV Year only if he fulfills the academic requirements of total 40% of credits from regular and supplementary examinations of I Year, II Year and III Year- I Semester {i.e., total 5 semesters}, irrespective of whether the candidate takes the examinations in all the subjects or not.

For lateral entry students, there is no credit based restriction for promotion from II year to III year. But a lateral entry student shall be promoted from III year to IV year only if he fulfills the academic requirements of total 40% of credits from regular and supplementary examinations of II year and III year- I Semester {i.e., total 3 semesters} irrespective of whether the candidate takes the examinations in all the subjects or not.

Students, who fail to complete their B.Tech. Programme within eight academic years from the year of their admission or fail to acquire the credits stipulated for the programme shall forfeit their seat in B.Tech. Programme and their admission shall stand cancelled. For lateral entry students they have to complete the programme in six years from their year of admission.

**XI. Award of Grades:**

The absolute grading system is adopted as follows:

S.No	Range of marks %		Grade	Grade Points	
1	> 90	≤ 100	O	10	Out Standing
2	> 80	≤ 90	A+	9	Excellent
3	> 70	≤ 80	A	8	Very Good
4	> 60	≤ 70	B+	7	Good
5	> 55	≤ 60	B	6	Above Average
6	≥ 50	≤ 55	C	5	Average
7	≥ 40	< 50	P	4	Pass
8		< 40	F	0	Fail
9			I	0	Ab (Absent)

**Note: Minimum grade to pass in a laboratory course is ‘C’.**

The performance of a student at the end of each semester is indicated in terms of Semester Grade Point Average (SGPA). The SGPA is calculated as below:

$$SGPA = \frac{\sum(\text{credits of a course} \times \text{grade points awarded for a course})}{\sum(\text{Credits of a course})}$$

SGPA is calculated for the candidates who have passed in all the courses in that semester. Cumulative Grade Point Average (CGPA) will be calculated from II semester onwards up to the final semester and its calculation is similar to that of SGPA, considering all the courses offered from the first semester onwards.

CGPA is calculated for those who clear all the courses including present semester.

## **XII. Award of Class:**

For award of class, all 160 credits are considered in case of four year programme and 122 credits in case of lateral entry admitted students. A candidate, who becomes eligible for the award of B.Tech., degree, shall be placed in one of the following classes.

S.No.	Class	CGPA
1	First Class with Distinction	7.0 or more*
2	First Class	6.0 or more
3	Second Class/Pass	5.0 or more but less than 6.0

- **First class with Distinction will be awarded only to those students who clear all the subjects of the program in first attempt of regular examinations.**

The CGPA can be converted to aggregate percentage by multiplying CGPA with 10, in case of requirement by any other university or for any other purpose.

## **XIII. Eligibility for Award of B.Tech. Degree:**

A student shall be eligible for the award of the B.Tech degree if he fulfills all the following conditions:

- 1) Registered and successfully completed all the components prescribed for eligibility in the Programme of study to which he is admitted within the stipulated period,
- 2) Obtained CGPA greater than or equal to 5.0 (Minimum requirement for Pass),
- 3) No disciplinary action is pending against him and
- 4) Has no dues to the Institute including hostels.

## **XIV. Malpractices:**

The Controller of Examinations/Dean of Examinations shall refer the cases of suspected malpractices in mid examinations and semester-end examinations to Malpractice Enquiry Committee constituted by the Institute. Such committee shall follow the approved scales of punishment. The Principal shall take necessary action against the erring students based on the recommendations of the committee.

## **XV. Transitory Regulations**

1. The student who is detained on re-admission has to continue the course work along with the regular students of the respective semester in which the student gets re-admission.
2. The student shall be required to do all the courses in the curriculum prescribed for the batch of students in which the student joins subsequently.
3. The student has to register for pre-requisite / substitute / Compulsory subjects offered in place of subjects already studied earlier. However, exemption will be given to those candidates who have already passed such courses in the earlier semester(s) he was originally admitted into and substitute subjects are offered in place of them as decided by the Board of Studies.

The mode of internal evaluation and end-semester examinations shall be on par with the regular students, i.e., the student has to follow the then mode of internal evaluation and the then question paper model for the end-semester examinations along with the regular

4. Students of the respective semester in which the student gets re-admission. The marks secured in the internal and end-semester examinations will be pro-rated in accordance with the regulations under which the student was first admitted.
5. For the subjects studied under earlier regulations but failed, the student has to appear, pass and acquire credits from the supplementary examinations as and when conducted. The question paper model shall remain same as one in which the student took examination during earlier regulations.
6. The promotion criteria based on attendance as well as credits shall be in accordance with the regulations under which the student was first admitted.
7. However, the decision of the Board of Studies will be final on any other clarification in this regard.

## **XVI. Amendments To Regulations:**

The Institute may, from time to time, revise, amend, or change the Regulations, Schemes of Examinations, and / or Syllabi and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the Institute.

## **XVII. General:**

- (i) **Where the words 'he', 'him', 'his', occur in the regulations, they include 'she', 'her', 'hers'.**
- (ii) **The academic regulation should be read as a whole for the purpose of any interpretation.**
- (iii) **In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Principal is final.**