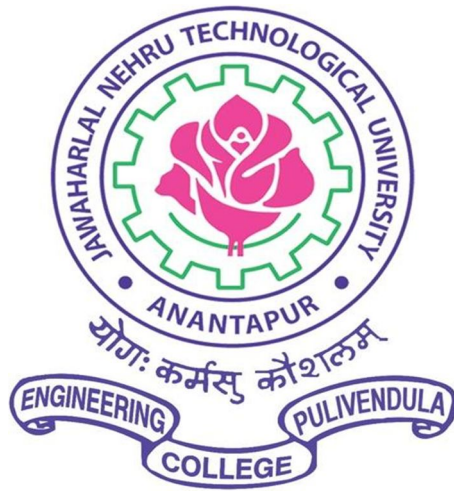


**R15 REGULATIONS
COURSE STRUCTURE
FOR
BACHELOR OF TECHNOLOGY
w.e.f.
2015 ADMITTED BATCH**



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
COLLEGE OF ENGINEERING (AUTONOMOUS) :: PULIVENDULA
PULIVENDULA-516390, Y.S.R. (DIST), ANDHRA PRADESH, INDIA**



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
COLLEGE OF ENGINEERING (AUTONOMOUS) :: PULIVENDULA**

Academic Regulations 2015 (R15) for B. Tech (Regular-Full time)

(With effect from the Academic Year 2015-16 for the students admitted into I year I semester)

1. Award of B.Tech Degree

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

- i. **Pursue a course of study for not less than four academic years and in not more than eight academic years. However, for the students of availing GAP year facility this period shall be extended up to 2 years at the most and these two years would not be counted for the maximum time for graduation.**
 - ii. **Register for 182 credits and secure 176 credits.**
2. Students, who fail to fulfill all the academic requirements for the award of the degree within **Eight (Ten for students availing GAP year)** academic years from the year of their admission, shall forfeit their seat in B.Tech course and their admission shall stand cancelled.

3. Courses of study

The following courses of study are offered at present under B. Tech. program with effect from the academic year 2015-16 and any other course as approved by the authorities of the University from time to time.

S. No.	Branch
01.	Civil Engineering
02.	Electrical & Electronics Engineering
03.	Mechanical Engineering
04.	Electronics and Communication Engineering
05.	Computer Science and Engineering

The entire course of study is of four academic years in semester pattern (for regular students) and of three academic years in semester pattern (for lateral entry students).

4. Distribution and Weightage of Marks

- i. The performance of a student in each semester shall be evaluated subject-wise with a maximum of 100 marks for theory and 75 marks for practical subject. In addition project work and comprehensive on-line exam shall be evaluated for 200 & 60 marks respectively.
- ii. For theory subjects the distribution shall be 30 marks for Internal Evaluation and 70 marks for the End-Examination.
- iii. There shall be five units in each of the theory subjects.
- iv. For theory subjects for all the semester, there shall be two midterm examinations. Each midterm examination consists of objective paper for 10 marks and subjective paper for 20 marks with duration of 1 hour 50 minutes (20 minutes for objective and 90 minutes for subjective paper).

Objective paper shall be set for maximum of 20 questions (multiple choice/fill-in the blanks/matching type/true or false) and minimum of 10 questions (definitions/ single sentence answer type) for 10 marks. Subjective paper shall contain five two marks questions without choice and three five marks questions. Student has to answer 2 out of three five marks questions and all two mark questions without choice. First midterm examination shall be conducted for I, II units of syllabus and second midterm examination shall be conducted for III, IV & V units. Final Internal marks for a total of 30 marks shall be arrived at by considering the marks secured by the student in both the mid examinations with 80% weightage to the better mid exam and 20% to the other, any fraction rounded off to the next higher mark.

***Note:** The midterm examination shall be conducted for first 20 minutes by distribution of the Objective paper and simultaneously marking the attendance. Then the descriptive question paper and the answer booklet shall be distributed. After 90 minutes the answered booklets are to be collected back. The student shall not be permitted to leave the exam hall in between.

- v. In the External Examinations there will be six questions with following pattern
 - a. All Questions have to be answered compulsorily.
 - b. Question I shall contain 10 short Answer questions “a” to “j” each of 2 marks covering all the units of syllabus. (Total 20 marks)
 - c. Out of the remaining five questions, EITHER/OR type shall be followed with 10 marks for each.
 - d. In each question as mentioned in (c), one, two or more bits can be set. Each of these questions from 2 to 6 shall cover one unit of the syllabus.
- vi. Further, whenever any theory subject with two parts is offered (combined subject),

For ex: Electrical & Mechanical Technology, then there shall be only two parts Part A & Part B in the question paper

 - Part – A: shall contain five one mark questions and followed by three questions, EITHER/OR type each for 10 marks.

- Part – B: shall contain five one mark questions and followed by three questions, EITHER/OR type each for 10 marks.
- vii. For practical subjects there shall be a continuous evaluation during the semester for 25 internal marks and 50 external Examination marks. Day-to-day work in the laboratory shall be evaluated for 25 marks by the concerned laboratory teacher based on the report of experiments/jobs. The end semester practical examination shall be conducted by the concerned laboratory teacher and senior expert in the same subject of the department nominated by the Principal.
 - viii. There shall be an audit pass course in Human values & Professional ethics and Advanced Communication skills lab with no credits. There shall be no external Examination. However, attendance in the audit course shall be considered while calculating aggregate attendance and student shall be declared pass in the audit course when he/she secures 40% or more in the internal examinations. If he/she does not secure 40% in the midterm examinations, he/she has to re-register that subject as and when it is offered.
 - ix. For the subject having design and/or drawing, such as Engineering Drawing, Machine Drawing and Estimation, the distribution shall be 30 marks for internal evaluation and 70 marks for external Examination. In the Internal evaluation for sessional will be 15 marks for day-to-day work that shall be evaluated by the concerned subject teacher based on the reports/submissions prepared in the class, and there shall be two midterm exams in a semester for a duration of 2hrs each, evenly distributed over the syllabi for 15 marks and the weightage is 80% for better mid marks and 20% for the other shall be considered as internal test marks. The sum of day to day evaluation and the internal test marks will be the final internal marks for the subject.
 - x. In the External Examinations for engineering drawing/ engineering graphics, there shall be five questions EITHER/ OR type of 14 marks each. There shall be no short answer type for external Examination. However, the external Examination pattern for the other subjects related to design/ drawing is mentioned along with the syllabus.
 - xi. There shall be two comprehensive online examinations conducted by the respective department one at the end of 2nd year and other at the end of third year with 60 objective questions for 60 marks on the subjects studied in the respective years of both semesters. The heads of the respective department are given the responsibility of preparing question paper and conducting the online examination by maintaining confidentiality. A student shall acquire one credit assigned to the online examination only when he/she secure 40% or more marks. In case, if a student fails in comprehensive online examination, he shall re-register by following a similar procedure adopted for the lab examinations.
 - xii. There shall be two choice based credit courses (Inter department), one in II- I and another in III-II. Each department shall offer a minimum of 3 subjects in such courses. A student shall be given a choice to select any one subject from the list of subjects offered by departments under choice based credit courses.
 - xiii. There shall be two choice based credit courses (Department specific) in IV- I semester. A minimum of six courses must be offered, out of which 2 courses shall be selected by the students.

- xiv. MOOCs shall be introduced. There shall be 3 MOOCs in the entire course duration.
- xv. Each MOOC course shall be offered in three different semesters of III-II, IV-I & IV – II. A minimum of six online courses must be offered, out of which 3 courses shall be selected by the students. The students shall register for the opted online courses offered by authorized institutions/Agencies. The Certificate issued by the institution/agency after successful completion of the course shall be considered for the award of credits by the College.
- xvi. Students shall have an option to do internship in the Industry during IV-II semester. Internship shall be carried out in such Industries where the College/ University have entered in to MoU. In such case of opting for Internship in Industry, the Industry/College shall offer all the courses along with the project work. Industry/Institution shall take the responsibility of evaluating the performance of the students' in-line with the college evaluation criteria. Since the College/ University enter into MoU with the Industries, selection of the candidates desirous of undertaking internship shall be done by a committee constituted by the College.
- xvii. Out of total of 200 marks for the project work, 60 marks shall be for Internal Evaluation and 140 marks for the end Semester Examination (Viva-voce). The internal evaluation shall be made by the departmental committee on the basis of two seminars given by each student on the topic of his/her project. The end semester examination (viva-voce) shall be conducted by a committee consisting of HOD, Project Supervisor and an End Examiner nominated by the Principal at the end of the project work.
- xviii. Laboratory marks and internal marks awarded by the department are not final. They are subjected to scrutiny and scaling by the college whenever necessary. In such cases, the internal and laboratory marks awarded by the department will be referred to a committee. The committee will arrive a scaling factor and marks will be scaled as per the scaling factor. The recommendation of committee is final and binding.
- xix. The laboratory records and internal test papers shall be preserved for minimum of 2 years.

5. Attendance Requirements:

- i. A student shall be eligible to appear for end semester examinations if he/she acquires a minimum of 75% of attendance in aggregate of all the subjects in a semester.
- ii. **Shortage of Attendance below 65% in aggregate shall in NO case be condoned.**
- iii. 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.
- iv. Students whose shortage of attendance is not condoned in any semester are not eligible to take their external Examination of that class and their registration shall stand cancelled.
- v. A student will not be promoted to the next semester unless he/she satisfies the attendance requirements of the present semester, as applicable. They may seek readmission for that semester as and when offered next.
- vi. A stipulated fee shall be payable towards condonation of shortage of attendance to the institution.

6. Minimum Academic Requirements:

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item no.5

- i. A student shall be deemed to have satisfied the minimum academic requirements and earned the credits allotted to each theory, design, drawing subject or project if he/she secures not less than 35% of marks in the external Examination and a minimum of 40% of marks in the sum total of the internal evaluation and external Examination taken together. However, in the case of laboratory, he/she should secure not less than 40% of marks in the end examination.
 - ii. Regular Entry students shall be promoted from II year to III year only if he/she fulfills the academic requirement of securing 40% of credits that have been studied up to II year I semester.
 - a. One regular and one supplementary examinations of I year I & II semesters.
 - b. One regular examination of II year I semester irrespective of whether the candidate takes the external Examination or not as per the normal course of study.
 - iii. Regular / Lateral Entry students shall be promoted from third year to fourth year only if he fulfills the academic requirements of securing 40% of **credits** of the subjects that have been studied up to III year I semester from the following examinations,
 - a. Two regular and two supplementary examinations of I year I & II semester.
 - b. Two regular and one supplementary examinations of II year I semester.
 - c. One regular and one supplementary examinations of II year II semester.
 - d. One regular examination of III year I semester irrespective of whether the candidate takes the external Examination or not as per the normal course of study.
- Note:** And in case of getting detained for want of credits by sections 7-(ii) and (iii), the student may make up the credits through supplementary exams of the above exams before the date of class work commencement of Third or Fourth year I semester respectively.
- iv. A student shall register and put up minimum attendance in all 182 credits and earn the 176 credits. Marks obtained in all 176 credits courses shall be considered for the calculation of percentage of marks obtained.
 - v. Students who fail to earn 176 credits as indicated in the course structure within **eight (Ten for students availing GAP year)** academic years from the year of their admission shall forfeit their seat in B.Tech. Course and their admission shall stand cancelled.

7. Course Pattern:

- i. The entire course of study is of four academic years in semester pattern (for regular students) and of three academic years in semester pattern (for lateral entry students).
- ii. A student eligible to appear for the external Examination in a subject, but absent at it or has failed in the external Examination may appear for that subject at the next supplementary examination as and when offered.

8. Transitory 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 be in the academic regulations into which the candidate is presently readmitted.

Candidate who was permitted with GAP year shall be eligible for rejoining into the succeeding year of their B.Tech from the commencement of class work subjected to **section 2** and they will be in the academic regulations into which the candidate is presently rejoining.

9. With-holding of results:

If the candidate has any dues not paid to the College or if any case of indiscipline or malpractice is pending against him/her, the result of the candidate shall be withheld and he/she will not be allowed / promoted into the next higher semester. The issue of awarding degree is liable to be withheld in such cases.

- 10.** Grading System is to be introduced. After each subject is evaluated for 100 marks, the marks obtained in each subject will be converted to a corresponding letter grade as given below, depending on the range in which the marks obtained by the student fall.

Table – Conversion into Grades and Grade Points assigned

Academic performance	Letter Grade	Grade points Assigned
≥ 95%	S	10
≥90% - < 95%	A++	9.5
≥ 85% - <90%	A+	9
≥80% - <85%	A	8.5
≥75% - <80%	B++	8
≥70% - <75%	B+	7.5
≥65% - <70%	B	7
≥60% - <65%	C++	6.5
≥55% - <60%	C+	6
≥50% - <55%	C	5.5
≥45% - < 50%	D	5
≥40%- < 45%	E	4.5
Below 40%	F(Fail)	0
Absent	Ab (Absent)	0

The following procedure shall be adopted to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA);

- i. 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.

- ii. The Cumulative Grade Point Average (CGPA) will be computed in the same manner taking into account 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 i^{th} semester and C_i is the total number of credits in that semester.

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

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 letters S, A, B, C, D, E and F.

11. 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	$\geq 4.0 < 5.5$

(The marks in internal evaluation and external Examination shall be shown separately in the marks memorandum)

Further, CGPA to a maximum of 0.05 shall be added which is just sufficient to effect change of class from pass class to Second class, Second class to First class, First class to First class with distinction for all the courses being offered, without adding any marks to the original marks secured by the students.

12. 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 II year to pursue entrepreneurship full time. 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 Head of the respective department shall forward such proposals submitted by the students to the College. An evaluation committee shall be constituted by the College to evaluate the proposal submitted by the student and the committee shall decide whether or not to permit student(s) to avail the Gap Year.

13. Minimum Instruction Days: The minimum instruction days including exams for each semester shall be 90 days.

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

15. There shall be no place for transfer within the Constituent Colleges.

16. General:

- 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 include “she”, “her”, “hers” respectively.
- iv. In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Principal is final.
- v. The college 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 roles with effect from the dates notified by the institution.

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