

**R13 REGULATIONS
COURSE STRUCTURE
FOR
BACHELOR OF TECHNOLOGY
w.e.f.
2013 ADMITTED BATCH**



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



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
COLLEGE OF ENGINEERING (AUTONOMOUS), PULIVENDULA – 516 390.**

**Academic Regulations 2013 (R13) for
B. Tech (Regular-Full time)**

(With effect from the Academic Year 2013-2014 for the students admitted into I year)

1. Award of B.Tech. Degree

A student will be declared eligible for the award of the B.Tech. Degree if he/she fulfils 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.
- ii. Register for 180 credits and secure all 180 credits

2. Students, who fail to fulfill 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 is cancelled.

3. Courses of study

The following courses of study are offered at present under B. Tech. program with effect from the academic year 2013-2014.

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

and any other course as approved by the authorities of the University from time to time.

4. Credits

	<i>I Year</i>		<i>Semester</i>	
	Periods / Week	Credits	Periods / Week	Credits
Theory	03	03	04	03
	04	05	--	--
Practical	03	04	03	02
Project	--	--	15	10

5. Distribution and Weightage of Marks

- i. The performance of a student in each semester / I year shall be evaluated subject –wise with a maximum of 100 marks for theory and 75 marks for practical subject. In addition seminar and project work shall be evaluated for 50 and 200 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 during the semester, there shall be two midterm examinations. Each mid-term 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 is set for 20 bits for 10 marks. Subjective paper shall contain 5 questions of which, student has to answer 3 questions evaluated for 20 marks. 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% weight-age to the better mid exam and 20% to the other.

However, for first year, there shall be three midterm examinations as in the above pattern. Final Internal marks for a total of 30 marks shall be arrived at by considering the marks secured by the student in all the three mid examinations* with 80% weightage to the average marks of the best two midterm examinations and 20% to the other.

*Note 1: 1st midterm examinations, shall be from unit – I, Second midterm examinations shall be from II & III units, and third midterm examinations shall be from IV & V units.

*Note 2: The subjective paper shall contain 5 questions of equal weightage of 10 marks and the marks obtained for 3 questions shall be condensed to 20 marks, any fraction rounded off to the next higher mark.

*Note 3: The midterm examination shall be conducted first by distribution of the Objective paper simultaneously marking the attendance, after 20 minutes the answered objective paper is to be collected back. The student is not allowed to leave the examination hall. Then the descriptive question paper and the answer booklet shall be distributed. After 90 minutes the answered booklets are to be collected back.

- v. For practical subjects there shall be a continuous evaluation during the semester for 25 sessional marks and 50 end 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 an external examiner and an internal examiner nominated by the Principal.*
- vi. 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.*

- vii. 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 end examination. The Internal evaluation for sessional will be 15 marks for day-to-day work in the class 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 sessional for the subject. However, when offered in the I year as 5 credits course, there shall be three midterm exams and the weightage is 80% of average marks of the best two midterm examinations and 20% from the other will be taken into consideration.
- viii. There shall be a seminar presentation in IV year II Semester. For the seminar, the student shall collect the information on a specialized topic and prepare a technical report, showing his understanding over the topic, and submit to the department before presentation. The report and the presentation shall be evaluated by the departmental committee consisting of Head of the department, seminar supervisor and a senior faculty member. The seminar shall be evaluated for 40 marks. There shall be no external examination for seminar.
- There shall be a Comprehensive Viva – Voce in IV year II Semester. The Comprehensive viva- voce will be conducted by the committee consisting of Head of the department and two senior faculty members of the department. The Comprehensive Viva – voce is aimed at to assess the students’ understanding in various subjects he/she studies during the B.Tech. course of study. The Comprehensive Viva- Voce is valued for 60 marks by the committee.
- A student shall acquire 3 credits assigned to the seminar & comprehensive viva-voce only when he/she secures 40 marks on aggregate out of 100 marks allocated. *If he/she fails to get 40 marks (put together) out of 100, he/she has to re-register for the seminar & comprehensive viva-voce as and when it is offered.*
- ix. Out of 200 marks allotted for the project work, 60 marks shall be for Internal Evaluation and 140 marks for the End Semester Examination (Viva-voce). 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.
- x. The evaluation of project work shall be conducted at the end of the IV year – II semester. 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.
- xi. The laboratory records and internal test papers shall be preserved for minimum of 3 years in the respective institutions as per the University norms and shall be produced to the Committees of the University as and when the same are asked for.

6. 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/ I year.
- 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 or I year may be granted by the College Academic Committee.
- iv. Students whose shortage of attendance is not condoned in any semester / I year are not eligible to take their end examination of that class and their registration shall stand cancelled.
- v. A student will not be promoted to the next semester unless he/she satisfies the attendance requirements of the present semester / I year, as applicable. They may seek readmission for that semester / I year when offered next.
- vi. A stipulated fee shall be payable towards condonation of shortage of attendance to the institution.

7. Minimum Academic Requirements:

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item no.6

- 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 end examination and a minimum of 40% of marks in the sum total of the internal evaluation and end examination taken together. However, in the case of laboratory, he/she should secure not less than 40% of marks in the end examination. In the Seminar & Comprehensive viva – voce he/she should secure 40% put together.
- ii. A student shall be promoted from II to III year only if he fulfills the academic requirement of securing **26 credits (40%)** of the subjects that have been studied up to II year I semester.
 - a. One regular and one supplementary examinations of I year.
 - b. One regular examination of II year I semester irrespective of whether the candidate takes the end examination or not as per the normal course of study.
- iii. A student shall be promoted from third year to fourth year only if he fulfills the academic requirements of securing **44 credits(40%)** of the subjects that have been studied upto III year I semester from the following examinations,
 - a. Two regular and two supplementary examinations of I year.
 - 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 end examination or not as per the normal course of study.

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 180 credits and earn all the 180 credits. Marks obtained in all 180 credits shall be considered for the calculation of percentage of marks obtained.
- v. Students who fail to earn 180 credits as indicated in the course structure within eight academic years from the year of their admission shall forfeit their seat in B.Tech. course and their admission shall stand cancelled.

8. Course pattern:

- i. The entire course of study is of four academic years. The first year shall be on yearly pattern and the second, third and fourth years on semester pattern.
- ii. A student eligible to appear for the end examination in a subject, but absent at it or has failed in the end examination may appear for that subject at the next supplementary examination offered.

9. 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.

10. 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, the result of the candidate shall be withheld and he will not be allowed / promoted into the next higher semester. The issue of awarding degree is liable to be withheld in such cases.

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	% of marks to be secured	From the aggregate marks secured for the best 180 Credits.
First Class with Distinction	70% and above	
First Class	Below 70% but not less than 60%	
Second Class	Below 60% but not less than 50%	
Pass Class	Below 50% but not less than 40%	

(The marks in internal evaluation and end examination shall be shown separately in the marks memorandum)

Further, percentage to the extent of 0.5% will be rounded off to next higher digit, 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. Minimum Instruction Days:

The minimum instruction days including exams for each semester / I year shall be 90/180 days respectively.

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

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

15. General:

- i. The academic regulations should be read as a whole for purpose of any interpretation.
- ii. Malpractices rules- nature and punishments is appended
- iii. Where the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.
- 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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PROPOSED MODIFICATIONS/ NEW GUIDELINES TO R13 REGULATIONS:

1. There shall be a two comprehensive online examinations conducted by the college, one at the end of III year I semester and the other at the end of III year – II semester , with 60 objective questions for 60 marks on the subjects studied in the respective semesters. The Heads of the concerned departments are given the responsibility of preparing question bank/ question paper and conducting the online examination maintaining confidentiality. A student shall acquire 1 credit assigned to the comprehensive online examination when he/she secures 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.
2. 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.
3. Any one theory subject being offered in III – II shall be replaced with a choice based credit course (Inter department). Each faculty shall offer a minimum of 3 subjects under choice based credit course. Students shall be given a choice to select any one subject from the list of courses offered by all faculties under choice based credit courses.
4. In place of an Open Elective and Elective – I in IV – I, there shall be two choice based credit courses (department specific). A minimum of six courses must be offered, out of which 2 courses shall be selected by the students.
5. In earlier regulations, seminar & comprehensive viva voce are offered in IV- II for 3 credits. It is proposed to offer comprehensive online examination in III – I & III-II for one

credit each (as defined in point 1) and comprehensive viva-voce shall be evaluated for 1 credit. Earlier Project work was assigned 10 Credits, whereas seminar and project work together is assigned 10 credits.

6. The Comprehensive viva-voce will be conducted by the committee consisting of Head of the Department and two senior faculty members of the department. The Comprehensive Viva – voce is aimed to assess the students’ understanding in various subjects he/she studies during the B.Tech course of study. The Comprehensive Viva- Voce shall be evaluated for 50 marks by the committee. There are no internal marks for the Comprehensive Viva-Voce. A student shall acquire 1 credit assigned to the seminar & comprehensive viva-voce only when he/she secures 40% or more marks. In case, if a student fails in comprehensive viva-voce, he shall reappear as and when IV/II supplementary examinations are conducted.
7. Out of 200 marks allotted for the project work, 60 marks shall be for Internal Evaluation and 140 marks for the End Semester Examination (Viva-voce). The Viva-Voce shall be conducted by a committee consisting of HOD, Project Supervisor and an External Examiner nominated by the University. The evaluation of project work shall be conducted at the end of the IV year – II semester. 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.
8. MOOCs are to be introduced. In place of 2 electives in IV – II, two subjects that are offered shall be through MOOCs. A minimum of four online courses must be offered, out of which 2 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.
9. Students shall have an option to do internship in the Industry during IV-II. Internship shall be carried out in such Industries where the College/University has entered in to MoU. In such case of opting for Internship in Industry, the Industry shall offer all the courses along with the project work in the Industry only. Industry shall take the responsibility of evaluating the performance of the students’ in-line with the College/ University evaluation criteria. Since the College enters into MoU with the Industries, selection of the candidates desirous of undertaking internship shall be done by a committee constituted by the College.

The Audit courses, MEFA and Management Science in the faculties wherever they are offered remain unaltered

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