



R K COLLEGE OF ENGINEERING

Accredited by NAAC with 'A' Grade and Autonomous

2024

ENGINEERING CURRICULUM

M. Tech. Regular


Chairman, Academic Council
RKCE (Autonomous)



R K COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada)

(Accredited by NAAC with 'A' Grade & AUTONOMOUS)

Kethanakonda (V), Ibrahimpatnam (M), Vijayawada, AMARAVATI-521 456.

www.rkce.ac.in

M. Tech (Regular-Full time)

(Effective for the students admitted into 1 year from the
Academic Year **2024-25** onwards)

ACADEMIC REGULATIONS R24 FOR M. Tech (REGULAR) DEGREE COURSE

(Applicable for the students of M. Tech (Regular) Course from the Academic Year 2019-20 onwards)

The M. Tech Degree of R K College of Engineering shall be conferred on candidates who are admitted to the program and who fulfil all the requirements for the award of the Degree.

1. ELIGIBILITY FOR ADMISSIONS

Admission to the above program shall be made subject to eligibility, qualification and specialization as prescribed by the Jawaharlal Nehru Technological University Kakinada from time to time.

Admissions shall be made on the basis of merit/rank obtained by the candidates at the qualifying Entrance Test conducted by the Jawaharlal Nehru Technological University Kakinada or on the basis of any other order of merit as approved by the Jawaharlal Nehru Technological University Kakinada subject to reservations as laid down by the Govt. from time to time.

2. AWARD OF M. Tech DEGREE

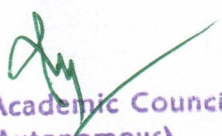
- i. A student shall be declared eligible for the award of the M. Tech Degree, if he pursues a course of study in not less than two and not more than four academic years.
- ii. **The student shall register for all 68 credits and secure all the 68 credits.**
- iii. The minimum instruction days in each semester are 90.

3. PROGRAMME OF STUDY

The following specializations are offered at present for the M. Tech Programme of study.

- i. M.Tech- Structural Engineering
- ii. M.Tech- Power Electronics & Drives
- iii. M.Tech- Machine Design
- iv. M.Tech- VLSI & Embedded System Design
- v. M.Tech- Computer Science & Engineering

and any other course as approved by AICTE/ University from time to time.


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4. ATTENDANCE

- i. A student shall be eligible to write University examinations if he acquires a minimum of 75% of attendance in aggregate of all the subjects/courses, and with minimum 50% in each and every course including practicals.
- ii. Condonation of shortage of attendance in aggregate up to 10% (65% and above and below 75%) in each semester shall be granted by the College Academic Committee.
- iii. Shortage of Attendance below 65% in aggregate shall not be condoned and not eligible to write their end semester examination of that class.
- iv. Students whose shortage of attendance is not condoned in any semester are not eligible to write their end semester examination of that class.
- v. A prescribed fee shall be payable towards condonation of shortage of attendance.
- vi. A student shall not be promoted to the next semester unless, he satisfies the attendance requirement of the present semester, as applicable. They may seek re-admission into that semester when offered next. If any candidate fulfills the attendance requirement in the present semester, he shall not be eligible for re-admission into the same class.

5. EVALUATION PROCESS

The performance of the candidate in each semester shall be evaluated subject-wise, with a maximum of 100 marks for theory and 100 marks for practical, on the basis of Internal Evaluation and End Semester Examination.

- i. For the theory subjects 75 marks shall be awarded based on the performance in the End Semester Examination and 25 marks shall be awarded based on the Internal Evaluation. The internal evaluation shall be made based on the **average** of the marks secured in the two Mid Term-Examinations conducted-one in the middle of the Semester and the other immediately after the completion of instruction. Each mid term examination shall be conducted for a total duration of 120 minutes with 4 questions (without choice) each question for 10 marks, and it will be reduced to 25 marks. End semester examination is conducted for 75 marks for all FIVE (5) questions (one question from one unit) to be answered (either or).
- ii. For practical subjects, 75 marks shall be awarded based on the performance in the End Semester Examinations and 25 marks shall be awarded based on the day-to-day performance as Internal Marks. The internal evaluation based on the day to day work-5 marks, record- 5 marks and the remaining 15 marks to be awarded by conducting an internal laboratory test. The end examination shall be conducted by the examiners, with a breakup marks of Procedure-20, Experimentation-30, Results-10, Viva-voce-15.

- iii. For Mini Project with Seminar, a student under the supervision of a faculty member, shall collect the literature on a topic and critically review the literature and submit it to the department in a report form and shall make an oral presentation before the Project Review Committee consisting of Head of the Department, supervisor/mentor and two other senior faculty members of the department. For Mini Project with Seminar, there will be only internal evaluation of 100 marks. A candidate has to secure a minimum of 50% of marks to be declared successful.
- iv. A candidate shall be deemed to have secured the minimum academic requirement in a subject if he secures a minimum of 40% of marks in the End semester Examination and a minimum aggregate of 50% of the total marks in the End Semester Examination and Internal Evaluation taken together.
- v. In case the candidate does not secure the minimum academic requirement in any subject (as specified in 5.IV) he has to re-appear for the End semester Examination in that subject. A candidate shall be given **one** chance to re-register for each subject provided the internal marks secured by a candidate **are less than 50% and has failed in the end examination.**
- vi. In such a case, the candidate must re-register for the subject(s) and secure the required minimum attendance. The candidate's attendance in the re-registered subject(s) shall be calculated separately to decide upon his eligibility for writing the end examination in those subject(s).

In the event of the student taking another chance, his internal marks and end examination marks obtained in the previous attempt shall stand cancelled. For reregistration the candidates have to apply to the principal through the controller of examinations by paying the requisite fees and get approval from the academic council before the start of the semester in which re-registration is required.
- vii. In case the candidate secures less than the required attendance in any re-registered subject(s), he shall not be permitted to write the End Examination in that subject. He shall again re-register the subject when next offered.
- viii. Laboratory examination for M. Tech. courses must be conducted with two Examiners, one of them being the Laboratory Class Teacher or teacher of the respective college and the second examiner shall be appointed by the principal from the panel of examiners submitted by the respective department HOD.

6. EVALUATION OF PROJECT / DISSERTATION WORK

Every candidate shall be required to submit a thesis or dissertation on a topic approved by the Project Review Committee.

- i. A Project Review Committee (PRC) shall be constituted with Head of the Department and two other senior faculty members in the department.

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- ii. Registration of Dissertation/Project Work: A candidate is permitted to register for the project work after satisfying the attendance requirement of all the subjects, both theory and practical.
- iii. After satisfying ii, a candidate has to submit, in consultation with his project supervisor, the title, objective and plan of action of his project work for approval. The student can initiate the Project work, only after obtaining the approval from the Project Review Committee (PRC).
- iv. If a candidate wishes to change his supervisor or topic of the project, he can do so with the approval of the Project Review Committee (PRC). However, the PRC shall examine whether or not the change of topic/supervisor leads to a major change of his initial plans of project proposal. If yes, his date of registration for the project work starts from the date of change of Supervisor or topic as the case may be.
- v. Continuous assessment of Dissertation-I and Dissertation-II during the Semester(s) will be monitored by the PRC.
- vi. A candidate shall submit his status report in two stages to the PRC, at least with a gap of 3 months between them.
- vii. The work on the project shall be initiated at the beginning of the II year and the duration of the project is two semesters. A candidate is permitted to submit Project Thesis only after successful completion of theory and practical course with the approval of PRC not earlier than 40 weeks from the date of registration of the project work. The candidate has to pass all the theory and practical subjects before submission of the Thesis.
- viii. Three copies of the Project Thesis certified by the supervisor shall be submitted to the College/School/Institute.
- ix. The thesis shall be adjudicated by one examiner selected by the Principal. For this, the head of the department shall submit a panel of 5 examiners, eminent in that field, with the help of the PRC.
- x. If the report of the examiner is not favourable, the candidate shall revise and resubmit the Thesis, in the time frame as decided by the PRC. If the report of the examiner is unfavorable again, the thesis shall be summarily rejected. The candidate has to re- register for the project and complete the project within the stipulated time after taking the approval from the Principal.
- xi. The Head of the Department shall coordinate and make arrangements for the conduct of Viva-Voce examination.
- xii. If the report of the examiner is favourable, Viva-Voce examination shall be conducted by a board consisting of the Supervisor, Head of the Department and the examiner who adjudicated the Thesis. The Board shall jointly report the candidate's work for a maximum of 100 marks as

one of the following:

- a. Excellent
 - b. Good
 - c. Satisfactory
 - d. Unsatisfactory
- xiii. If the report of the Viva-Voce is unsatisfactory (ie, < 50 marks), the candidate shall retake the Viva-Voce examination only after three months. If he fails to get a satisfactory report at the second Viva-Voce examination, the candidate has to re-register for the project and complete the project within the stipulated time after taking the approval from the principal.

7. MINIMUM ACADEMIC REQUIREMENTS:

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item no. 4.

- I. A student who could not secure a minimum of 50% aggregate from midterm examination marks is not eligible to appear for the semester end examination and shall have to repeat that semester.
- II. 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 secures not less than 40% of marks in the end examination and a minimum of 50% of marks in the sum total of the internal evaluation and end examination taken together. In the internship & project he/she should secure 40%. For practical examination if he secures not less than 50% of marks in the semester end examination.

8. CUMULATIVE GRADE POINT AVERAGE (CGPA)

Marks Range Theory / Laboratory / Mini Project / Project Work or Dissertation (Max – 100)	Letter Grade	Level	Grade Point
≥ 90	O	Excellent	10
≥ 80 to < 90	S	Very Good	9
≥ 70 to < 80	A	Good	8
≥ 60 to < 70	B	Fair	7
≥ 50 to < 60	C	Satisfactory	6
< 50	F	Fail	0
	AB	Absent	0

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

i. **Computation of SGPA**

Semester Grade Point Average: SGPA(S_k) of k^{th} semester (1 to 4) is 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 total number of credits of all the courses undergone/registered by a student, i.e

$$S_k = \frac{\sum_{i=1}^n (C_i * G_i)}{\sum_{i=1}^n C_i}$$

Where C_i is the number of credits of the i^{th} course/subject in a semester and G_i is the grade point scored by the student in the i^{th} course / subject and n is the number of courses/subjects registered in that semester.

ii. **Computation of CGPA**

Cumulative Grade Point Average: The CGPA is calculated in the same manner taking into account all the ' m ' courses / subjects registered by student over all the semesters of a Programme i.e., in all 4 semesters.

$$S_i = \frac{\sum_{i=1}^m (C_i * S_i)}{\sum_{i=1}^m C_i}$$

Where S_i is SGPA of i^{th} sem and C_i is total number of credits in that semester.

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts. Equivalent Percentage = (CGPA – 0.75) x 10

9. AWARD OF DEGREE AND CLASS

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

Class Awarded	CGPA to be secured	Remarks
First Class with Distinction	≥ 7.75 (Without any supplementary appearance)	From the CGPA secured from 68 Credits
First Class	≥ 7.75 (With any supplementary appearance)	
	≥ 6.75 & < 7.75 (Without any supplementary appearance)	
Second Class	≥ 6.75 and < 7.75 (With any supplementary appearance)	
	≥ 6.0 to < 6.75 (Without any supplementary appearance)	
Pass Class	≥ 6.0 to < 6.75 (With any supplementary appearance)	

The Grades secured, Grade points and Credits obtained will be shown separately in the memorandum of marks.

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10. WITHHOLDING OF RESULTS

If the student is involved in indiscipline / malpractices / court cases, the result of the student will be withheld.

11. TRANSITORY REGULATIONS (for R24)

- i. Discontinued or detained candidates are eligible for re-admission into same or equivalent subjects at a time as and when offered.
- ii. The re-admitted candidate will be governed by the rules & regulations under which the candidate has been admitted.

12. GENERAL

- i. Wherever 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 the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Principal is final.
- iv. The College may change or amend the academic regulations or syllabi at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the Institute.

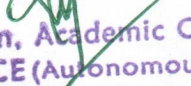

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MALPRACTICES RULES
DISCIPLINARY ACTION FOR / IMPROPER CONDUCT IN EXAMINATIONS


	Nature of Malpractices/Improper conduct	Punishment
	<i>If the candidate:</i>	
1. (a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that Semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the controller of examinations.
3	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.


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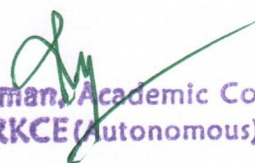
4.	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all semester end examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
5.	Smuggles in the Answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all end semester examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
6.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.


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7.	Refuses to obey the orders of the Chief Superintendent/Assistant-Superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer- in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.
8.	Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all semester end examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.


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9.	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the University for further action to award suitable punishment.	


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