



## **JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**

*(Established by Andhra Pradesh Act No.30 of 2008)*

**Kakinada – 533 003, Andhra Pradesh (India)**

### **ACADEMIC REGULATIONS R25 FOR M. Tech (REGULAR) PG DEGREE COURSE**

Applicable for the students admitted to M. Tech (Regular) Course from the Academic Year 2025-26 and onwards. The M. Tech Degree of Jawaharlal Nehru Technological University Kakinada shall be conferred on candidates who are admitted to the program and who fulfil all the requirements for the award of the Degree.

#### **1.0 ELIGIBILITY FOR ADMISSIONS**

Admission to the above program shall be made subject to eligibility, qualification and specialization as prescribed by the University/affiliating bodies 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 State Govt./University or on the basis of any other order of merit as approved by the State Govt./University, subject to reservations as laid down by the Govt. from time to time.

#### **2.0 AWARD OF M. Tech DEGREE**

2.1 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.

2.2 The student shall register for all 80 credits and secure all the 80 credits.

2.3 The minimum instruction days in each semester are 90.

#### **3.0 PROGRAMME OF STUDY**

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

##### **M.Tech in**

1. Advanced Manufacturing Systems
2. Agricultural Engineering
3. AI & DS
4. AI & ML
5. Artificial Intelligence
6. Avionics
7. Bio-technology
8. CAD/CAM
9. Civil Engineering
10. Communication Systems
11. Computer Aided Design & Computer Aided Manufacture
12. Computer Aided Structural Analysis & Design
13. Computer Science
14. Computer Science & Engineering
15. Computer Science & Technology
16. CSE
17. CSE (AI&ML)
18. CSE (AI)

19. CSE (Cyber security)
20. CSE (Data Science)
21. CSE (DS)
22. CSE (IOT)
23. CSE(AI & ML)
24. Cyber Security
25. Data Science
26. Digital Electronics & Communication Systems
27. Digital Electronics and Communication Engineering
28. Digital Electronics and Communication Systems
29. Digital Systems & Computer Electronics
30. ECE (VLSI & Embedded Systems)
31. Electric Power System
32. Electric Vehicle Technology
33. Electrical & Power Engineering
34. Electrical Machine & Drives
35. Electrical Power Systems
36. Electronics & Communication (VLSI Design)
37. Electronics and Communication (VLSI Design)
38. Embedded System & VLSI
39. Embedded System & VLSI Design
40. Embedded Systems
41. Environmental Engineering
42. Environmental Engineering & Management
43. Environmental Occupational Health & Safety
44. Highway Engineering
45. Information Technology
46. Internet of Things (IoT)
47. Machine Design
48. Mechanical (CAD/CAM)
49. Microwave & Communication Engineering
50. Mining Engineering
51. Nano-Technology
52. Power and Industrial Drives
53. Power Electronics
54. Power Electronics & Drives
55. Power Electronics & Electrical Drives
56. Power Electronics & Power Systems
57. Power Electronics and Systems
58. Power Electronics Drives
59. Power System Control & Automation
60. Power Systems
61. Power Systems & Automation
62. Power Systems Control & Automation Engineering
63. Remote Sensing
64. Renewable Energy
65. Robotics & Artificial Intelligence
66. Software Engineering

67. Soil Mechanics & Foundation Engineering
68. Structural Engineering
69. Thermal Engineering
70. Thermal Power Engineering
71. Thermal Sciences & Energy Systems
72. Transportation Engineering
73. VLSI
74. VLSI & Embedded Systems
75. VLSI & Embedded Systems Design
76. VLSI Design
77. VLSI Design & Embedded Systems
78. VLSI Embedded Systems
79. VLSI Systems Design

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

**3.0 Departments offering M. Tech Programmes with specializations are noted below:**

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>Civil Engg.</b> | <ol style="list-style-type: none"> <li>1. M.Tech. <del>Structural Engineering</del></li> <li>2. M.Tech. <del>Computer Aided Structural Engineering</del></li> <li>3. M.Tech <del>Infrastructure Engineering &amp; Management</del></li> <li>4. M.Tech <del>Civil Engineering</del></li> <li>5. M. Tech <del>Soil Mechanics and Foundation Engineering</del></li> <li>6. M.Tech <del>Geo-Technical Engineering</del></li> <li>7. M.Tech <del>Transportation Engineering</del></li> <li>8. M.Tech <del>Environmental Engineering</del></li> <li>9. M.Tech <del>Geo-Informatics</del></li> <li>10. M. Tech <del>Highway Engineering</del></li> </ol> |
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| <b>EEE</b> | <ol style="list-style-type: none"> <li>1. M.Tech <del>Power Electronics</del></li> <li>2. M.Tech <del>Power &amp; Industrial Drives</del></li> <li>3. M.Tech <del>Power Electronics &amp; Electrical Drives</del></li> <li>4. M.Tech <del>Power System Control &amp; Automation</del></li> <li>5. M.Tech <del>Power Electronics &amp; Drives</del></li> <li>6. M.Tech <del>Power Systems</del></li> <li>7. M.Tech <del>Power Systems Engineering</del></li> <li>8. M.Tech <del>High Voltage Engineering</del></li> <li>9. M.Tech <del>Power Electronics and Power Systems</del></li> <li>10. M.Tech <del>Power System and Control</del></li> <li>11. M.Tech <del>Power Electronics &amp; Systems</del></li> <li>12. M.Tech <del>Electrical Machines and Drives</del></li> <li>13. M.Tech <del>Advanced Power Systems</del></li> <li>14. M.Tech <del>Power Systems with Emphasis on High Voltage Engineering</del></li> <li>15. M.Tech <del>Control Engineering</del></li> <li>16. M.Tech <del>Control Systems</del></li> <li>17. M.Tech <del>Electrical Power Engineering</del></li> <li>18. M.Tech <del>Power Engineering &amp; Energy System</del></li> </ol> |
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| <b>ME</b>                        | <ol style="list-style-type: none"> <li>1. M.Tech Thermal Engineering</li> <li>2. M.Tech CAD/CAM</li> <li>3. M.Tech Machine Design</li> <li>4. M.Tech Computer Aided Design and Manufacture</li> <li>5. M.Tech Advanced Manufacturing Systems</li> <li>6. M.Tech Computer Aided Analysis &amp; Design</li> <li>7. M.Tech Mechanical Engineering Design</li> <li>8. M.Tech Mining Engineering</li> <li>9. M.Tech Automobile Engineering</li> </ol>                                                                                                                                                                                                                                                                                                                                               |
| <b>ECE</b>                       | <ol style="list-style-type: none"> <li>1. M.Tech Systems and Signal Processing</li> <li>2. M.Tech Digital Electronics and Communication Systems</li> <li>3. M.Tech Electronics &amp; Communications Engineering</li> <li>4. M.Tech Communication Systems</li> <li>5. M.Tech Communication Engineering &amp; Signal Processing</li> <li>6. M.Tech Microwave and Communication Engineering</li> <li>7. M.Tech Telematics</li> <li>8. M.Tech Digital Systems &amp; Computer Electronics</li> <li>9. M.Tech Embedded System</li> <li>10. M.Tech VLSI</li> <li>11. M.Tech VLSI Design</li> <li>12. M.Tech VLSI System Design</li> <li>13. M.Tech Embedded System &amp; VLSI Design</li> <li>14. M.Tech VLSI &amp; Embedded System</li> <li>15. M.Tech VLSI Design &amp; Embedded Systems</li> </ol> |
|                                  | <ol style="list-style-type: none"> <li>16. M.Tech Image Processing</li> <li>17. M.Tech Digital Image Processing</li> <li>18. M.Tech Computers &amp; Communication</li> <li>19. M.Tech Computers &amp; Communication Engineering</li> <li>20. M.Tech Instrumentation &amp; Control Systems</li> <li>21. M.Tech VLSI &amp; Micro Electronics</li> <li>22. M.Tech Digital Electronics &amp; Communication Engineering</li> <li>23. M.Tech Embedded System &amp; VLSI</li> </ol>                                                                                                                                                                                                                                                                                                                   |
| <b>CSE</b>                       | <ol style="list-style-type: none"> <li>1. M.Tech Computer Science &amp; Engineering</li> <li>2. M.Tech Computer Science</li> <li>3. M.Tech Computer Science &amp; Technology</li> <li>4. M.Tech Computer Networks</li> <li>5. M.Tech Computer Networks &amp; Information Security</li> <li>6. M.Tech Information Technology</li> <li>7. M.Tech Software Engineering</li> <li>8. M.Tech Neural Networks</li> <li>9. M.Tech Cyber Security</li> <li>10. MCA</li> </ol>                                                                                                                                                                                                                                                                                                                           |
| <b>Metallurgical Engineering</b> | <ol style="list-style-type: none"> <li>1. M. Tech Material Science and Technology</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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| <b>Inter disciplinary</b> | <ol style="list-style-type: none"> <li>2. <del>M.Tech—Chemical Engineering</del></li> <li>3. <del>M.Tech—Bio technology</del></li> <li>4. <del>M.Tech—Nano Technology</del></li> <li>5. <del>M.Tech—Food Processing Technology</del></li> <li>6. <del>M.Tech—Avionics</del></li> <li>7. <del>M.Tech—Remote Sensing</del></li> <li>8. <del>M.Tech—Spatial Information Technology</del></li> <li>9. <del>M.Tech—Environmental Engineering &amp; Management</del></li> <li>10. <del>M.Tech—Renewable Energy</del></li> <li>11. <del>M.Tech—Environmental Occupational Health &amp; Safety</del></li> <li>12. <del>M.Tech—Agricultural Engineering</del></li> </ol> |
| <b>MBA</b>                | <ol style="list-style-type: none"> <li>1. <del>MBA Regular</del></li> <li>2. <del>Integrate MBA</del></li> <li>3. <del>MBA (Agribusiness Management/Entrepreneurship)</del></li> <li>4. <del>MBA (Master in Hospital Administration)</del></li> <li>5. <del>MBA (Logistics and Supply Chain Management)</del></li> <li>6. <del>Dual Degree MBA (Previously MAM)</del></li> </ol>                                                                                                                                                                                                                                                                                |

#### 4.0 **ATTENDANCE (SUBJECT WISE PROMOTION IS INTRODUCED)**

- 4.1 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 **75%** in each and every course including **Laboratories**.
- 4.2 Condonation of shortage of attendance in aggregate up to 10% **for only hospitalization** (65% and above and below 75%) in each **course/semester** shall be granted by the College Academic Committee. (**ONLY ONE TIME in the entire course work**)
- 4.3 Shortage of Attendance **below** 65% in aggregate shall not be condoned and not eligible to write their end semester examination of that **course**.
- 4.4 **Students whose shortage of attendance is not condoned in any semester/course are not eligible to write their end semester/course examination of that class.**
- 4.5 A prescribed fee shall be payable towards condonation of shortage of attendance.
- 4.6 ~~A student shall not be allowed to write SEE in the course promoted to the next semester unless, he satisfies the attendance requirement in the course of the present semester, as applicable. They may seek re-register re-admission for that course into that semester when offered next. College need to take permission from the University by submitting students list for re-registration, at least 30 days before commencement of the classwork.~~
- 4.6 **A student shall not be permitted to appear for the Semester End Examination (SEE) in a course unless they meet the prescribed attendance requirements for that course. Such students may re-register for the course in the subsequent semester when it is offered. The college must obtain permission from the University by submitting the list of students eligible for re-registration at least 30 days prior to the commencement of classwork**
- 4.7 **If any candidate fulfils the attendance requirement in the present semester/for the course, he/she shall not be eligible for re-admission/re-register into the same class.**

## 5.0 EVALUATION

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

5.1 For the theory courses **60** marks shall be awarded based on the performance in the End Semester Examination and **40** marks shall be awarded based on the Internal Evaluation. The **continuous** / 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 midterm 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 **60** marks for all FIVE (5) questions (one question from one unit) to be answered (either or).

5.2 For practical subjects, **60** marks shall be awarded based on the performance in the End Semester Examinations and **40** marks shall be awarded based on the day-to-day performance as Internal Marks. The internal evaluation based on the day to day work-~~10~~ **5** marks, record- ~~10~~ **5** marks and the remaining ~~20~~ **45** marks to be awarded by conducting an internal laboratory test. The end examination shall be conducted by the examiners, with breakup marks of Procedure-20, Experimentation-20 ~~30~~, Results-10, Viva-voce-10~~45~~.

5.3 For 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 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.

5.4 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.

5.5 In case the candidate does not secure the minimum academic requirement in any subject (as specified in 5.4) 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.** 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 stands cancelled. For re-registration the candidates have to apply to the University through the college by paying the requisite fees and get approval from the University before the start of the semester in which re-registration is required.

5.6 In case the candidate secures less than the required attendance in any re-registered subject(s), he/she shall not be permitted to write the End Examination in that subject. He/She shall again re-register the subject when next offered.

5.7 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 University from the panel of examiners submitted by the respective college.

- 5.8 Students shall undergo mandatory summer internship / industrial training (2 credits) for a minimum of eight weeks duration at the end of second semester of the Programme/Summer Break. A student will be required to submit a summer internship/industrial training report to the concerned department and appear for an oral presentation before the committee. The Committee comprises of a Professor of the department ~~Head of the Department~~ and two faculty. The report and the oral presentation shall carry 40% and 60% weightages respectively. For summer internship / industrial training, there will be only internal evaluation of 100 marks. A candidate has to secure a minimum of 50% of marks to be declared successful.
- 5.9 The objective of comprehensive viva-voce is to assess the overall knowledge of the student in the relevant field of Engineering/Specialization in the PG program. Viva will be conducted in 3<sup>rd</sup> semester. The duration of the viva will be around 30 min. The examination committee will be constituted by the HoD and consist of Professor of the department and two faculty. For comprehensive viva-voce, there will be only internal evaluation of 100 marks. A candidate has to secure a minimum of 50% of marks to be declared successful.

## **6.0 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.

- 6.1 A Project Review Committee (PRC) shall be constituted with Head of the Department and two other senior faculty members in the department.
- 6.2 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.
- 6.3 After satisfying 6.2, 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).
- 6.4 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.
- 6.5 Continuous assessment of Dissertation-Part A and Dissertation-Part B during the Semester(s) will be monitored by the PRC. *Dissertation-Part A will be only internal evaluation by PRC for 100 marks. A candidate has to secure a minimum of 50% of marks to be declared successful.*
- 6.6 *The candidate shall submit a status report to the PRC in two stages, each accompanied by an oral presentation, with a minimum interval of three months between the two.*
- 6.7 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.~~

- 6.8 Three copies of the Project Thesis certified by the supervisor shall be submitted to the College/School/Institute.
- 6.9 The thesis shall be adjudicated by one examiner selected by the University. For this, the Principal of the College shall submit a panel of 5 examiners, eminent in that field, with the help of the guide concerned and head of the department.
- 6.10 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 not favourable again, the thesis shall be summarily rejected. The candidate has to reregister for the project and complete the project within the stipulated time after taking the approval from the University.
- 6.11 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 Head of the Department shall coordinate and make arrangements for the conduct of Viva-Voce examination. The Board shall jointly report the candidate's work for a maximum of 100 marks as one of the following:
- Excellent
  - Good
  - Satisfactory
  - Unsatisfactory
- 6.12 If the report of the Viva-Voce is unsatisfactory (i.e., < 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 University.

## 7.0 Cumulative Grade Point Average (CGPA)

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

### Computation of SGPA

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

$$SGPA (S_i) = \frac{\sum (C_i \times G_i)}{\sum C_i}$$
- 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.

### Computation of CGPA

- The **CGPA** is also calculated in the same manner taking into account all the courses undergone by a student over all the semester of a Programme, i.e.



$$\text{CGPA} = \sum (\text{Ci} \times \text{Si}) / \sum \text{Ci}$$

- Where Si is the SGPA of the i<sup>th</sup> semester and Ci is the 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

## 8.0 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                          |                                       |
|---------------------------------|---------------------------------------------|---------------------------------------|
| First Division with Distinction | $\geq 7.75$ (without supplementary History) | From the CGPA secured from 80 credits |
| First Class                     | $\geq 6.75$                                 |                                       |
| Second Class                    | $\geq 5.0$ to $< 6.75$                      |                                       |

The secured grade, grade points, status and credits obtained will be shown separately in the memorandum of marks.

If a student wants to leave the program / exit after successful completion of first two semesters, he/she will be awarded Post Graduate Diploma in the specialization concerned.

## 9.0 WITHHOLDING OF RESULTS

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

### 10.0 GENERAL

10.1 Wherever the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.

10.2 The academic regulation should be read as a whole for the purpose of any interpretation.

10.3 In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.

10.4 The University 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 University.

## **MALPRACTICES RULES**

### **DISCIPLINARY ACTION FOR / IMPROPER CONDUCT IN EXAMINATIONS**

|        | <b>Nature of Malpractices/Improper conduct</b>                                                                                                                                                                                                                                                                                                                                                                                       | <b>Punishment</b>                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <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.<br><br>The Hall Ticket of the candidate is to be cancelled and sent to the University. |

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| 3. | 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 University 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. |
| 4. | 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 University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.                                                                                                                                                                                                                                      |
| 5. | 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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|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. | <p>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 officerin-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.</p> | <p>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.</p>                                                     |
| 7. | <p>Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>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 University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat</p> |
| 8. | <p>Possess any lethal weapon or firearm in the examination hall.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>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.</p>                                                                                                                                                                                      |

|     |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. | <p>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.</p> <p>Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.</p> |
| 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.                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Malpractices identified by squad or special invigilators:

1. Punishments to the candidates as per the above guidelines.
2. Punishment for institutions : (if the squad reports that the college is also involved in encouraging malpractices)
  - (i) A show cause notice shall be issued to the college.
  - (ii) Impose a suitable fine on the college.
  - (iii) Shifting the examination centre from the college to another college for a specific period of not less than one year.

**Programme Structure**  
**R25 MTech (XXXX) Structure**  
**MTech (XXXX) I – Semester**

| S. No. | Course Code | Course Title          | L         | T        | P        | C         |
|--------|-------------|-----------------------|-----------|----------|----------|-----------|
| 1      |             | Program Core – 1      | 3         | 1        | 0        | 4         |
| 2      |             | Program Core – 2      | 3         | 1        | 0        | 4         |
| 3      |             | Program Core – 3      | 3         | 1        | 0        | 4         |
| 4      |             | Program Elective – I  | 3         | 0        | 0        | 3         |
| 5      |             | Program Elective – II | 3         | 0        | 0        | 3         |
| 6      |             | Laboratory – 1        | 0         | 1        | 2        | 2         |
| 7      |             | Laboratory – 2        | 0         | 1        | 2        | 2         |
| 8      |             | Seminar-I             | 0         | 0        | 2        | 1         |
|        |             | <b>TOTAL</b>          | <b>15</b> | <b>5</b> | <b>6</b> | <b>23</b> |

**List of Professional Elective Courses in I Semester (Electives – I & II)**

| S.No. | Course Code | Course Title |
|-------|-------------|--------------|
| 1     |             |              |
| 2     |             |              |
| 3     |             |              |
| 4     |             |              |
| 5     |             |              |
| 6     |             |              |
| 7     |             |              |
| 8     |             |              |

@ Minimum 2/3 themes per elective

### **MTech (XXXX) II – Semester**

| <b>Sl. No.</b> | <b>Course Code</b> | <b>Course Title</b>    | <b>L</b>  | <b>T</b> | <b>P</b> | <b>C</b>  |
|----------------|--------------------|------------------------|-----------|----------|----------|-----------|
| 1              |                    | Program Core – 4       | 3         | 1        | 0        | 4         |
| 2              |                    | Program Core – 5       | 3         | 1        | 0        | 4         |
| 3              |                    | Program Core – 6       | 3         | 1        | 0        | 4         |
| 4              |                    | Program Elective – III | 3         | 0        | 0        | 3         |
| 5              |                    | Program Elective - IV  | 3         | 0        | 0        | 3         |
| 6              |                    | Laboratory – 3         | 0         | 1        | 2        | 2         |
| 7              |                    | Laboratory – 4         | 0         | 1        | 2        | 2         |
| 8              |                    | Seminar – II           | 0         | 0        | 2        | 1         |
|                |                    | <b>TOTAL</b>           | <b>15</b> | <b>5</b> | <b>6</b> | <b>23</b> |

### **List of Professional Elective Courses in II Semester (Electives III & IV)**

| <b>S.No.</b> | <b>Course Code</b> | <b>Course Title</b> |
|--------------|--------------------|---------------------|
| 1            |                    |                     |
| 2            |                    |                     |
| 3            |                    |                     |
| 4            |                    |                     |
| 5            |                    |                     |
| 6            |                    |                     |
| 7            |                    |                     |
| 8            |                    |                     |

@ Minimum 2/3 themes per elective

**MTech (XXXX) - III Semester**

| Sl. No. | Course Code | Course Title                                                       | L        | T        | P         | C         |
|---------|-------------|--------------------------------------------------------------------|----------|----------|-----------|-----------|
| 1       |             | Research Methodology and IPR / Swayam 12 week MOOC course – RM&IPR | 3        | 0        | 0         | 3         |
| 2       |             | Summer Internship/ Industrial Training (8-10 weeks)*               | -        | -        | -         | 3         |
| 3       |             | Comprehensive Viva <sup>#</sup>                                    | -        | -        | -         | 2         |
| 4       |             | Dissertation Part – A <sup>\$</sup>                                | -        | -        | 20        | 10        |
|         |             | <b>TOTAL</b>                                                       | <b>3</b> | <b>-</b> | <b>20</b> | <b>18</b> |

\* Student attended during summer / year break and assessment will be done in 3<sup>rd</sup> Sem.

# Comprehensive viva can be conducted courses completed upto second sem.

\$ Dissertation – Part A, internal assessment

**MTech. (XXXX) – IV Semester**

| Sl. No. | Course Code | Course Title                       | L        | T        | P         | C         |
|---------|-------------|------------------------------------|----------|----------|-----------|-----------|
| 1       |             | Dissertation Part – B <sup>%</sup> | -        | -        | 32        | 16        |
|         |             | <b>TOTAL</b>                       | <b>-</b> | <b>-</b> | <b>32</b> | <b>16</b> |

% External Assessment



## Revised Bloom's Taxonomy Action Verbs

| Definitions               | I. Remembering                                                                                                                                                                                                                                                                                                                                             | II. Understanding                                                                                                                                                                                                                                                                                                | III. Applying                                                                                                                                                                                                                                                                                                | IV. Analyzing                                                                                                                                                                                                                                                                                                                                                                                                                                                       | V. Evaluating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | VI. Creating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Bloom's Definition</b> | Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.                                                                                                                                                                                                                                                      | Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.                                                                                                                                                                   | Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.                                                                                                                                                                                             | Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.                                                                                                                                                                                                                                                                                                                            | Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Verbs</b>              | <ul style="list-style-type: none"> <li>Choose</li> <li>Define</li> <li>Find</li> <li>How</li> <li>Label</li> <li>List</li> <li>Match</li> <li>Name</li> <li>Omit</li> <li>Recall</li> <li>Relate</li> <li>Select</li> <li>Show</li> <li>Spell</li> <li>Tell</li> <li>What</li> <li>When</li> <li>Where</li> <li>Which</li> <li>Who</li> <li>Why</li> </ul> | <ul style="list-style-type: none"> <li>Classify</li> <li>Compare</li> <li>Contrast</li> <li>Demonstrate</li> <li>Explain</li> <li>Extend</li> <li>Illustrate</li> <li>Infer</li> <li>Interpret</li> <li>Outline</li> <li>Relate</li> <li>Rephrase</li> <li>Show</li> <li>Summarize</li> <li>Translate</li> </ul> | <ul style="list-style-type: none"> <li>Apply</li> <li>Build</li> <li>Choose</li> <li>Construct</li> <li>Develop</li> <li>Experiment with</li> <li>Identify</li> <li>Interview</li> <li>Make use of</li> <li>Model</li> <li>Organize</li> <li>Plan</li> <li>Select</li> <li>Solve</li> <li>Utilize</li> </ul> | <ul style="list-style-type: none"> <li>Analyze</li> <li>Assume</li> <li>Categorize</li> <li>Classify</li> <li>Compare</li> <li>Conclusion</li> <li>Contrast</li> <li>Discover</li> <li>Dissect</li> <li>Distinguish</li> <li>Divide</li> <li>Examine</li> <li>Function</li> <li>Inference</li> <li>Inspect</li> <li>List</li> <li>Motive</li> <li>Relationships</li> <li>Simplify</li> <li>Survey</li> <li>Take part in</li> <li>Test for</li> <li>Theme</li> </ul> | <ul style="list-style-type: none"> <li>Agree</li> <li>Appraise</li> <li>Assess</li> <li>Award</li> <li>Choose</li> <li>Compare</li> <li>Conclude</li> <li>Criteria</li> <li>Criticize</li> <li>Decide</li> <li>Deduct</li> <li>Defend</li> <li>Determine</li> <li>Disprove</li> <li>Estimate</li> <li>Evaluate</li> <li>Explain</li> <li>Importance</li> <li>Influence</li> <li>Interpret</li> <li>Judge</li> <li>Justify</li> <li>Mark</li> <li>Measure</li> <li>Opinion</li> <li>Perceive</li> <li>Prioritize</li> <li>Prove</li> <li>Rate</li> <li>Recommend</li> <li>Rule on</li> <li>Select</li> <li>Support</li> <li>Value</li> </ul> | <ul style="list-style-type: none"> <li>Adapt</li> <li>Build</li> <li>Change</li> <li>Choose</li> <li>Combine</li> <li>Compile</li> <li>Compose</li> <li>Construct</li> <li>Create</li> <li>Delete</li> <li>Design</li> <li>Develop</li> <li>Discuss</li> <li>Elaborate</li> <li>Estimate</li> <li>Formulate</li> <li>Happen</li> <li>Imagine</li> <li>Improve</li> <li>Invent</li> <li>Make up</li> <li>Maximize</li> <li>Minimize</li> <li>Modify</li> <li>Original</li> <li>Originate</li> <li>Plan</li> <li>Predict</li> <li>Propose</li> <li>Solution</li> <li>Solve</li> <li>Suppose</li> <li>Test</li> <li>Theory</li> </ul> |