

**RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)**

MASTER OF TECHNOLOGY (M.TECH.) PROGRAMME

REGULATIONS (2020)



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RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY
(Autonomous)

ACADEMIC REGULATIONS FOR M. TECH. DEGREE PROGRAMMES - 2020
(CHOICE BASED CREDIT SYSTEM)

The regulations here under are effective from the academic year 2020 - 2021 and applicable to students admitted in Rajagiri School of Engineering & Technology, Kakkannad, an Autonomous Institution affiliated to A. P. J. Abdul Kalam Technological University, Thiruvananthapuram, Kerala. The regulations are subject to amendments as may be made by the Academic Council of the Institution from time to time. Any or all such amendments will be effective from such date to such batches of students as may be decided by the Academic Council.

1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In the following regulations unless the context otherwise requires.

- i) “Programme” means Degree Programme that is M.Tech Degree Programme.
- ii) “Choice Based Credit System”: The choice based credit system provides a ‘cafeteria’ type approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning.
- iii) “Stream” means specialization or discipline of M.Tech Degree Programme, like VLSI and Embedded Systems, Network Engineering, etc.
- iv) “Course” means a theory or practical course that is normally studied in a semester, like Mathematics, Cloud Computing, etc.
- v) “Head of the Institution” and “Chairman- Academic Council” mean the Principal of the College who is responsible for all academic activities for the implementation of relevant rules and regulations.
- vi) “Head of the Department”- HoD means Head of the Department concerned.
- vii) “Controller of Examinations”- means the authority of the institution who is responsible for all activities of the Examinations of all the disciplines and hereafter called CoE.
- viii) “RSET” means Rajagiri School of Engineering & Technology.

2. ADMISSION TO THE PROGRAMME

- 2.1 Admission Policy, eligibility for admission and admission procedure shall be decided by competent authority for admissions from time to time.
- 2.2 If at any time after admission, it is found that a candidate has not fulfilled any of the requirements

stipulated by the institution, the Principal may revoke the admission of the candidate and report the matter to the Academic Council for proper action.

3. STRUCTURE OF THE M.TECH. DEGREE PROGRAMME

- 3.1 Minimum Duration: The programme will extend over a period of TWO years leading to the Degree of Master of Technology (M. Tech.) of the A. P. J. Abdul Kalam Technological University. The two academic years will be divided into FOUR SEMESTERS with two semesters per year.
- 3.2 Maximum Duration: The total period for completion of the programme reckoned from the commencement of the first semester to which the candidate is admitted shall not exceed the maximum period of 4 years spanning 8 semesters.
- 3.3 Every academic year shall have two semesters normally from “1st July to 31st December (Odd semester)” and “1st January to 30th June (Even semester)”. Each semester will have a minimum of 72 working days.
- 3.4 Every stream of the M.Tech. Degree Programme will have a curriculum and syllabi for the courses approved by the Academic Council (AC). Innovative elective courses and add - on courses can be included as and when required, on the recommendations of the respective Board of Studies (BoS) and subject to the approval of the AC. All revisions shall be based only on the recommendations of the BoS concerned.
- 3.5 Every M.Tech. Degree Programme will have a curriculum with syllabi consisting of theory/practical/tutorial/Project courses.
- 3.6 The curriculum of any branch of the M.Tech. Degree Programme will have a total of 64 to 68 academic credits.
- 3.7 The Academic Programmes follow the credit system.

The general pattern is as given below:

Lecture (L) per week	1 credit
Tutorial (T) per week	1 credit
Hours Practical(P) per week	1 credit
Project	credits
Total	18 credits

- 3.8 No semester shall have more than 5 lecture-based courses and 2 laboratory and/or drawing/seminar/project courses in the curriculum.
- 3.9 Credit per semester shall not greater than 23.
- 3.10 The medium of instruction shall be English. All examinations, project/seminar reports

and presentations shall be in English.

4. COURSE REGISTRATION AND ENROLMENT

All students have to register for the courses they desire to attend in a semester. Students admitted to the first semester are advised to register for all courses offered in the first semester. They do not have to enroll for the semester. All other students are required to register at the end of the semester for the courses they desire to take in the next semester. Later they have to enroll for these courses in the new semester based on the results in the previous semester. This allows them to make minor changes in the list of courses already registered for. Before enrolment, students should clear all dues including any fees to be paid and should not have any disciplinary proceedings pending. The dates for registration and enrolment will be given in the academic calendar.

5. ACADEMIC MONITORING AND STUDENT SUPPORT

- 5.1 **Advisory System:** There shall be a Faculty advisor/Class Teacher for a class. The role of the faculty advisor/class teacher is to advise students in academic matters and also to support the students during personal difficulties related to studies.
- 5.2 All requests/applications from a student or parent to higher offices are to be forwarded/recommended by his/her Class Teacher. Students and parents shall first approach their Class Teachers for all kinds of advice, clarifications and permissions on academic matters. It is the official responsibility of the Institution to provide the required guidance, clarifications and advice to the students and parents strictly based on the prevailing academic regulations.
- 5.3 The internal marks earned during the semester and eligibility of attendance shall be uploaded in the institutional portal only after displaying the same in the notice board at least for two working days. This is for the information and feedback of the students. Any concerns raised by the students regarding attendance and internal marks and activity points shall be looked into in the combined meetings of HoDs, class teachers, course faculty and the students concerned. The Principal/ HoD shall ensure the proper redressal of the concerns raised by the students regarding internal assessment and attendance. The Class teachers shall be the custodian of the minutes and action taken reports of such meetings.
- 5.4 The Class Teachers shall get the minutes and action taken reports of the meetings approved by the HoD and the Principal. The Class Teachers shall keep a hard copy of the consolidated statement of attendance internal marks of the students. It shall be kept with the HoD without fail for all sorts of inspections.
- 5.5 Every stream shall have a Class Committee consisting of Teachers of the class concerned, student representatives and a Chairperson who is not teaching the class. The overall goal of

Class Committee is to improve the teaching- learning process. The functions of the Class Committee include

- (i) Solving problems experienced by students in the classroom and in the laboratories.
- (ii) Clarifying the regulations of the degree programme and the details of rules therein.
- (iii) Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
- (iv) Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.

5.6 The Class Committee for a class under a particular stream is normally constituted by the HoD. The Class Teacher is the ex-officio member and the Convener of the Class Committee. The Class Committee shall be constituted within the first week of each semester.

- (i) 2 student representatives shall be included in the Class Committee.
- (ii) The Principal may participate in any Class Committee of the Institution.
- (iii) The Chairperson is required to prepare the minutes of every meeting, submit the same to the Principal within two days of the meeting and arrange to circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the Management, the same shall be brought to the notice of the Management by the Head of the Institution.

5.7 The first meeting of the Class Committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the regulations. Two or three subsequent meetings may be held in a semester at suitable intervals. The Class Committee Chairman shall put on the notice board the cumulative attendance particulars of each student at the end of every such meeting to enable the students to know their attendance details. During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

6. **ACADEMIC AUDITING**

The Internal Quality Assurance Cell (IQAC) gives advice and guidelines to the administration to maintain high quality work in academics and administration. The cell monitors the quality

aspects of all the academic and non-academic activities of the Institution. The cell works on various accreditation aspects. IQAC shall conduct academic auditing in every semester.

Academic auditing shall cover:

- (i) Course delivery and adherence to the course plan, syllabus coverage, quality of question papers used for internal examinations, internal evaluation, maintenance of laboratory experimental set ups and equipment, practical assignments, mini projects and conduct of practical classes and their evaluation.
- (ii) Co-curricular and extra-curricular activities available for students, the monitoring mechanism of activity points to be earned by the students.
- (iii) Academic functioning of the college encompassing students, faculty and college administration covering punctuality, attendance, discipline, academic, environment, learning ecosystem, academic accountability, academic achievements and benchmarking.
- (iv) The audit shall also cover the quality criteria prescribed by MHRD/UGC/AICTE/NIRF/NAAC/NBA.

7. ASSESSMENT

- 7.1 There shall be End Semester Examinations (ESE) in every semester for all courses as prescribed under the respective curriculum, except the practical courses.
- 7.2 Semester classes shall be completed at least ten days before the commencement of the ESE.
- 7.3 The ESE will be held twice in a year – May/June session (for even semesters) and November/December session (for odd semesters).
- 7.4 Candidates in each semester will be evaluated both by Continuous Internal Evaluation (CIE) and ESE.
- 7.5 The ratio of CIE to ESE shall be as below:-
 1. Theory Courses : 2:3 (40 marks and 60 marks)
 2. Laboratory Courses : CIE only
 3. Project : 4:1 (120 marks and 30 marks)
 4. Seminar : CIE only
- 7.6 Continuous Internal Evaluation (CIE): The CIE will be on the basis of the day-to-day work, periodic tests (minimum two in a semester), mini projects and assignments (minimum two). The Faculty Member (s) concerned shall carry out the CIE for the course allotted to him/her.
- 7.7 The CIE marks for individual subjects shall be computed by giving weightage to the following parameters unless otherwise specified in the curriculum.

Course	Tests	Assignment/ Class work/ course project/Records
Theory	30 (15+15)	10
Drawing/ Practical	40	60

7.8 There shall be minimum two internal evaluation tests, each of 1hr./2hrs duration. Each test shall cover 50% of the syllabus and shall be for 25/ 50marks. Retest shall be permitted to the students who could not appear for the internal tests due to genuine grounds. Three days shall be utilized for conducting the internal evaluation test.

7.9 Project work:

Total marks for the project: 150

In the 3rd semester: 50 marks

Evaluation by Project Supervisor: 20 marks

Presentation and Evaluation by Project Review Committee: 30 marks

In the 4th semester: 100 Marks

In the fourth semester the student has to continue the project work done in phase-1. After the successful completion of the work the student should submit a detailed report (Dissertation). The work carried out should lead to a publication in an International Journal/Conference proceeding (preferably indexed by SCOPUS/SCI/SCIE). Specific weightage will be given to the papers accepted in SCOPUS/SCI indexed conferences/journals at the time of final dissertation evaluation.

Project is to be evaluated both in the third and the fourth semesters. Based on these evaluations the grade is finalized in the fourth semester.

7.9.1 Project evaluation marks shall be as follows:-

- **Dissertation evaluation by the supervisor/s : 30 Marks**
 - *supervisor/s mark – 15 Marks*
 - *project report (Dissertation) – 10 Marks*
 - *publication – 05 Marks*
- **Presentation & evaluation by the Committee : 40 Marks**
 - *continuous evaluation – 20 Marks*
 - *final internal presentation – 20 Marks*
- **Evaluation by the external examiner : 30 Marks**

A candidate has to secure a minimum of 45% of mark in the external examination. For the successful completion of the project, 45 % of the total project mark is to be achieved.

- 7.9.2 A Project Review Committee (PRC) shall be constituted with the Head of the Department as Chairperson, Project Supervisor, Project coordinator and one senior faculty member of the Departments offering the M. Tech. programme. The PRC will examine the overall progress of the Project Work and decide whether or not the Project is eligible for final submission. If the student fails to obtain the minimum required marks, he/she has to reappear for Project review as and when conducted.
- 7.9.3 For project work done through internships at industries/research organisations approved by the PRC, they have to meet the criteria set by the PRC with respect to the project evaluation. Publication is at the discretion of the PRC.
- 7.9.4 After approval from the PRC, a soft copy of the thesis should be submitted along with the plagiarism report to the PRC. The Thesis will be accepted for submission, if the similarity index is less than 30%. If the similarity index has more than the required percentage, the student is advised to modify accordingly and re-submit the soft copy of the thesis.
- 7.9.5 The external examiner shall be from outside RSET and should have a doctoral degree. The dissertation shall be adjudicated by an external examiner appointed by the Controller of Examinations (CoE). The department project coordinators shall coordinate and make arrangements for the conduct of project viva- voce examination. The Dissertation viva-voce examination shall be conducted by a board consisting of the supervisor, project coordinator, Head of the Department and the external examiner who adjudicated the Thesis. The Dissertation viva-voce external examination marks must be entered and submitted in the Rajagiri Examination Automation (REXA)portal on the day of the examination.
- 7.9.6 If a candidate wishes to change his topic of the project, he can do so with the approval of the 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.
- 7.9.7 If the quantum of work done by the candidate is found to be unsatisfactory, the PRC may extend the duration of the project up to one more semester (extended submission/ submission with fine), giving reasons for this in writing to the student.
- 7.9.8 Normally students are expected to do the project within the college. However they are permitted to do the project in an industry or in a government research institute under a qualified supervisor from that organization; the topic of investigation should be in line with the project part planned in the 3rd semester. Student should apply for this through the project supervisor indicating the reason for this well in advance, preferably at the beginning of the 3rd semester. This application is to be vetted by a committee constituted for the same by the Principal and based on the recommendation of the committee the student is permitted to do the project outside the college. The same committee should ensure the

progress of the work periodically and keep a record of this. The application for this shall include the following:-

Topic of the Project, Project work plan in the 3rd Semester, Reason for doing the project outside, Institution/Organization where the project is to be done, External Supervisor Name, Designation, Qualification and Experience, Letter of consent of the External Supervisor as well as from the organization.

7.10 The eligibility criteria for registering to the ESE are attendance in the course, 45% or more marks in the internal examination and having no pending disciplinary action. The minimum attendance for appearing for the ESE is 75% in each course. Students who do not meet these eligibility criteria are awarded an FE grade.

7.11 However Students, who have completed a course but could not write the end semester examination, shall be awarded “I” Grade, provided they meet the above eligibility criteria. They shall register (exam registration) and appear for the ESE at the next opportunity and earn the credits without having to register (course registration) for the course again.

7.12 The students with FE grade shall register for the courses during the normal semesters in which the courses are offered. However, for the seventh and eighth semester FE grade students can register for the courses in the next immediate chance, if offered by the institute.

7.13 A student who does not register for all the courses listed in the curriculum for a semester shall not be eligible to enroll for the next higher semester.

7.14 A student will be eligible for the award of M. Tech. Degree of the A P J Abdul Kalam Technological University on satisfying the following requirements:

1. Fulfilled all the curriculum requirements within the stipulated duration of the course.
2. Earned the required minimum credits as specified in the curriculum for the stream of specialization.
3. No pending disciplinary action.

7.15 Students registered for a course have to attend the course regularly and undergo the CIE and appear for the ESE. Credits for the course are deemed to be earned only on getting at least a pass grade ‘P’ or better in the composite evaluation.

7.16 Pass minimum for a course shall be 45% for the ESE and 45% of CIE and ESA put together. Letter grade ‘F’ will be awarded to the student for a course if either his/her mark for the ESE is below 45 % or the overall mark [CIE + ESE] is below 45 %.

7.17 Students who received F grade in an ESE have to appear for the ESE at the next opportunity and

earn the credits. They shall not be permitted to register for the course again.

7.18 Grading is based on the overall % marks obtained by the student in a course. The grade card will give only the grades against the courses the student has registered. Semester grade card shall give the grade for each registered course, Semester Grade Point Average (SGPA) for the semester as well as Cumulative Grade Point Average (CGPA).

Grade and Grade Points		
Grades	Grade Point (GP)	Percentage of Total Marks obtained in the course
O	10	90% and above
A+	9.0	85% and above but less than 90%
A	8.5	80% and above but less than 85%
B+	8.0	75% and above but less than 80%
B	7.0	70% and above but less than 75%
C	6.0	60% and above but less than 70%
P (Pass)	5.0	50% and above but less than 60%
F (Fail)	0	Below 50% (CIE + ESE) or Below 45 % for ESE
FE	0	Below 45% due to lack of eligibility criteria
I	0	Below 45% not appear for the end semester examination but fulfills the eligibility criteria.

7.19. Classification of M.Tech. Degree

First Class with Distinction	CGPA 8.0 and above
First Class	CGPA 6.5 and above

7.20 Credits requirements for promotion

Semester	Allotted Credits	Cumulative Credits	Credits to be earned for Promotion
First	23	23	Not Applicable
Second	19	42	16 credits in first semester
Third	8	50	12 credits in second semester
Fourth	18	68	5 credits in second semester

7.21 There is no provision for improving the grade.

7.22 Grade cards shall be made available in the student's REXA login for the registered courses, in every semester. On earning the required credits for the degree, the college will issue the final consolidated grade sheet for the M. Tech Degree Programme including CGPA.

7.23 Calculation of SGPA/CGPA

SGPA and CGPA are calculated as follows.

SGPA = $\frac{\sum(C_i \times GP_i)}{\sum C_i}$, where 'C_i' is the credit assigned for a course and 'GP_i' is the grade point for that course. Summation is done for all courses specified in the curriculum of that semester. The failed and incomplete courses shall also be considered in the calculation.

CGPA = $\frac{\sum(C_i \times GP_i)}{\sum C_i}$, where 'C_i' is the credit assigned for a course and 'GP_i' is the grade point for that course. Summation is done for all courses specified in the curriculum up to that semester for which the 'CGPA' is needed. Here the failed courses shall also be accounted.

CGPA for the B. Tech Degree Programme is arrived at by considering all course credits that are needed for the degree and their respective grade points.

Equivalent percentage mark will be = $10 * CGPA - 2.5$.

7.24 Any act of violation of examination guidelines, indiscipline, misbehavior, or unfair practice in examinations from the part of students, faculty members, staff, institution, management or any other source shall be viewed very seriously. It is the responsibility of the Principal and the

Controller of Examinations to see that the examinations are conducted strictly and as specified in the examination Manual. Malpractices in examinations observed or reported by faculty member, invigilator or anybody shall be immediately reported to the Principal. The Principal shall in turn conduct a preliminary enquiry giving the student concerned a chance to explain his/her case. The Principal shall then forward the case with his/her preliminary enquiry report and remarks to the CoE along with all related documents and evidences within two working days. The CoE shall decide the course of action on the issue as per the prescribed norms in the Examination Manual.

8. WELFARE COMMITTEE

RSET shall have a Student's Welfare Committee, constituted by the Principal. This committee shall have at least three faculty members as members and the chairman shall be a senior faculty member in the rank of a Professor. This committee is entrusted with the task of looking after the welfare of the students by taking appropriate steps with the concurrence of the principal.

9. GRIEVANCES AND APPEALS COMMITTEE

RSET shall have a Grievances Redress Committee constituted by the Principal to address the grievances of the students and to consider their appeals on any decisions made by the college. This committee consisting of at least three faculty members and chaired by a senior professor shall look into student's grievances and appeals and give its recommendations to the Principal for action.

10. MALPRACTICE

If a student indulges in malpractice in the ESE he / she shall be liable for punishment as prescribed in the Examination Manual.

11. RAGGING

Ragging of any nature is a criminal and non-bailable offence. Involvement in ragging shall lead to stringent punishment, including imprisonment as per the law of the land. A student, whose involvement in ragging is established, shall be summarily dismissed from the college. Each student of the Institute, along with his/her parent, is required to give an undertaking in this regard and the same is to be submitted at the time of registration.

12. REVISION OF REGULATION AND CURRICULUM

The Institution may from time-to-time revise, amend or change the Regulations, scheme of examinations and syllabi if found necessary, through the approval of BoS and Academic Council of the College.

13. SPECIAL CASES

In the event of any clarification in the interpretation of the above rules and regulations, they shall be referred to the Principal. The Principal in consultation with respective bodies will offer suitable interpretation/ clarifications/ amendments required for special case on such references and get them ratified in the next meeting of the Academic council, if necessary. The decision of the Principal/Academic council is final.

14. TRANSITORY PROVISION

Notwithstanding anything contained in these regulations, the Principal shall, for a period of two years from the date of coming into force of these regulations, has the power to provide by order that these Regulations shall be applied to any M. Tech. programme with such modifications as may be necessary.