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PERIYAR MANIAMMAI INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
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M.Tech. Regulations 2020 (Full-Time & Part-Time)

CONTENTS

1. Admission and Eligibility

1.1 Admission

The eligibility criteria for admission to AICTE approved M. Tech. (Full Time / Part Time) course is B.E. / B.Tech. with at least 50% marks (45% marks in case of candidate belonging to reserved category) in aggregate

1.2 Eligibility

Candidates for admission to the first semester of the M.Tech programme shall be required to have passed an appropriate Under-Graduate Degree Examination as given in Table 1 or equivalent as specified by the Tamil Nadu Common Admission (TANCA) criteria.

Table 1: Eligibility Criteria

S.No.	M.Tech Programme	Eligibility
1.	Environmental Engineering	A Degree in B.E/B.Tech (Civil/ Chemical/ Geo-Informatics/ Biotech/ Mech/ EEE)
2.	Nanotechnology	A Degree in B.E/B.Tech (Electronics, Electrical and Electronics, Mechanical, Biotechnology, Chemical or M.Sc. with Physics, Mathematics, Chemistry, Biochemistry or equivalent).
3.	Power Electronics and Drives	A Degree in B.E / B.Tech (EEE / ECE / E&I / I & C / Electronics / Instrumentation or Equivalent).
4.	Renewable Energy	A Degree in B.E / B. Tech (Mech /Chemical / Biotech / Electro Chemical / Electrical) or equivalent.
5.	Wireless Communications	A Degree in B.E / B.Tech. (ECE / Telecommunication / IT/ EEE) or equivalent.

Note :

As per AICTE norms, Minimum of Two years Full Time work experience in a registered firm/ Company/ Industry/ Educational and/ Government, Autonomous Organizations in the relevant field in which admission is sought.

1.3 Mode of Study

1.3.1 Full-Time

Candidates admitted under "Full-Time" should be available in the University during the entire duration of working hours for the curricular, co-curricular and extra-curricular activities assigned to them.

The Full-Time candidates should not attend any other Full-Time programme(s) /course(s) or take up any Full-Time job / Part-Time job in any organization during the period of the Full-Time programme. Violation of the above rules will result in removal of candidate from the PG programme.

1.3.2 Part-Time / Week End

This mode of study is applicable to those candidates working in any organization. Attendance requirement is same as that for full time candidates. The classes are conducted during weekends (Saturdays and Sundays).

1.3.3 **Conversion** from one mode of study to the other is permitted by getting due permission from the Dean (Academics) and approval from the Vice-Chancellor.

2. Duration of the Programme

2.1 The duration of Full-Time M.Tech programme is two years, divided into four semesters. The duration of each semester is 90 working days. The maximum number of years to complete the course is n + 2 + (1 for exceptional cases) years.

2.2 The duration of Part-Time M.Tech programme is three years divided into six semesters. The duration of each semester is 45 working days. The maximum number of years to complete the course is n + 2 + (1 for exceptional cases) years.

3. Definitions

University means Periyar Maniammai Institute of Science and Technology (PMIST) popularly known as Periyar Maniammai University (PMU). *Programme* refers to M.Tech. *Course* refers to a Specific subject in the programme.

4. Pre-requisite

Where a prerequisite is specified for a course, the student should have studied the prescribed pre-requisite course/subject to register for that course.

5. Medium of Instruction

Medium of instruction is English.

6. Programmes Offered

The following programmes are offered under M.Tech programme.

Full Time

- Environmental Engineering
- Nanotechnology (5 Years)
- Wireless Communications
- Renewable Energy

Parttime

- Environmental Engineering
- Nanotechnology
- Power Electronics and Drives
- Renewable Energy
- Wireless Communications

7. Programme Structure

Each programme in M.Tech should have a minimum of 70 credits (180+20 for Intergrated). The curriculum structure (with recommended credits) consists ofcore subjects, elective subjects and subjects from mathematics.

8. Choice Based Credit System

Choice based credit system is incorporated in this regulation. The elective subject can be chosen by the students. One credit stands for one lecture hour or 2 tutorial/ practical hours.

9. Examination and Assessment

Note: M.Tech Integrated for I – III years follow Assessment given in B.Tech Regulation 2017

Abbreviation: F : Formative ; S - Summative

i. Theory L:T:P 3:0:0 and 3:1:0 F:S = 50:50

S.No	Task	Notes	%
1	CA 1 Real time evaluation(Subject Specific)	45 - 80 Days	20
2	CA 2 such as Seminar, Assignment, case study/method study/project study, demonstration, drawing, sketch, essay, exhibition/Showcase, interview, journal, laboratory/practical, literature review, model, presentation, portfolio, practicum, problem solving, projects, reflection, reports, self- assessment, research paper, thesis and workshop, etc.	0 - 75 Days (Minimum 5 and maximum 8)	30
3	CA 3- End Semester Pattern (MCQ – 20% + Descriptive 80%)	After 90 Days (Equal weightage to all portions)	50

ii. Laboratory L:T:P 0:0:1 and 0:0:2 F:S = 70:30

S.No	Task	Notes	%
1	CA-1 (Real Time Evaluation)	45 - 82 Days	30
2	CIA -2 (Based on observation Note and rubrics designed by lab teacher)	Every fortnight	30
3	CIA -3 or EA-1 Product/Simulation/Design/Programme/Process (CIA/EA to be decided by the course teacher)	After 45 days	10
		After 90 Days(Summative)	10
4	EA-2 End semester exam (External Assessment)	After 90 Days	20

iii. Theory cum Laboratory L:T:P 3:0:1, 3:1:1 and 2:1:1 F:S = 50:50

Assessment to be done as I and II. The entry will be as two components. The examination software will take the respective weightage as given below.

Note: Theory Part: Lab Part = **3:0:1(75:25), 3:1:1(75:25) and 2:1:1 (50:50)**
(Note: Course teacher can suggest any change if required).

iv. Theory cum Laboratory L:T:P 3:0:0 and 3:1:0 **F:S = 50:50**

S.No	Task	Notes	%
1	Real Time Evaluation- T	During 1- 90 Days	30
2	CA-T - End Semester Pattern (MCQ – 20% + Descriptive 80%)	After 90 Days (Equal weightage to all portions)	20
3	CA-L 1 (Based on observation Note and rubrics designed by lab teacher)	During 1- 90 Days	30
4	CA-L 2 End semester exam (Internal Assessment)	After 90 Days	20

Note: Theory Part : Lab Part = 50:50

v. Theory cum Laboratory L:T:P 1:0:2 **F:S = 60:40**

S.No	Task	Notes	%
1	Real Time Evaluation- T	During 1-90 Days	15
2	CA-T 1 (End of the semester) (Class Test- Descriptive 10)	Will be conducted after 90 working days	10
3	CIA-L 2 (Based on observation Note and rubrics designed by lab teacher)	During1-90 Days	15
4	CIA or EA – L 3- Product/Simulation/Design/Programme/Process (CIA/EA to be decided by the course teacher)	During 0-45 Days	30
		After 90 Days	10
5	EA-L 4 End semester exam (External Assessment)	After 90 Days	20

Note : Theory Part: Lab Part = 25:75

vi. Project

Guidelines for Dissertation Phase – I and II for M. Tech. programmes

1. Introduction

The dissertation / project topic should be selected / chosen to ensure the satisfaction of the urgent need to establish a direct link between education, national development and productivity and thus reduce the gap between the world of work and the world of study.

The dissertation should have the following

1. Relevance to social needs of society
2. Relevance to value addition to existing facilities in the institute
3. Relevance to industry need
4. Problems of national importance
5. Research and development in various domain

The student should complete the following:

1. Literature survey Problem Definition
2. Motivation for study and Objectives
3. Preliminary design / feasibility / modular approaches
4. Implementation and Verification

5. Report and presentation

The dissertation stage II is based on a report prepared by the students on dissertation allotted to them. It may be based on:

1. Experimental verification / Proof of concept.
2. Design, fabrication, testing of Communication System.
3. The viva-voce examination will be based on the above report and work.

The dissertation is a year-long activity, to be carried out andevaluated in two phases i.e. Phase – I: July to December and Phase – II: January to June.

The dissertation may be carried out preferably in-house i.e. department's laboratories and centers OR in industry allotted through department's T & P coordinator.

After multiple interactions with guide and based on comprehensive literature survey, the student shall identify the domain and define dissertation objectives. The referred literature should preferably include journals from several subsets of Science Citation Index (SCI) and Science Citation Index Expanded (SCIE). In case of Industry sponsored projects, the relevant application notes, while papers, product catalogues should be referred and reported.

Student is expected to detail out specifications, methodology, resources required, critical issues involved in design and implementation and phase wise work distribution and submit the proposal within a month from the date of registration.

2. Deliverables and Evaluation

Phase – I deliverables: A document report comprising of summary of literature survey, detailed objectives, project specifications, paper and/or computer aided design, proof of concept/functionality, part results, A record of continuous progress.

Phase – I evaluation: A committee comprising of guides of respective specialization shall assess the progress/performance of the student based on report, presentation and Q & A. Incase of unsatisfactory performance, committee may recommend repeating the Phase-I work.

During phase – II, student is expected to exert on design, development and testing of the proposed work as per the schedule. Accomplished results/contributions/innovations should be published in terms of research papers in reputed journals and reviewed focused conferences OR IP/Patents.

Phase – II deliverables: A dissertation report as per the specified format, developed system in the form of hardware and/or software, a record of continuous progress.
Phase – II evaluation: Guide along with appointed external examiner shall assess theprogress/performance of the student based on report, presentation and Q & A. In case of unsatisfactory performance, committee may

recommend for extension or repeating the work

	PHASE I				PHASE II			
Review No	**R0**	**R1**	**R2**	**R3**	**R4**	**R5**	**Publications***	**R6**
%	10	25	25	40	20	20	20	40
Day	15	45	70	90	30	30	85	90
FA/SA	FA	FA	FA	SA	FA	FA	FA	SA
CREDITS	10				16			

*** Publication** - 2 papers (1 - National/International Journal and 1 - National/ International conference)

10. Attendance Requirement

Continuous Assessment (CA1 and CA2) – Minimum Attendance – 65 %

Continuous Assessment – CA3 - Maximum of five marks is allotted for attendance as one of the component

Percentage of Attendance	**76-81**	**82-87**	**88-93**	**94 -99**	**100**
Marks	**1**	**2**	**3**	**4**	**5**

End Semester Examinations

1	Overall 75% and above	Indidual Course / All Courses put together	Eligibility to write all examinations.
2	Overall 65% and above but below Overall 75%	Indidual Course	Shortage of attendance is to be condoned on medical grounds with proper documents. Condonation fee of Rs. 300/- per course is to be paid by the students. ***Medical reasons*** – Granting of permission on production of all the necessary medical documents (like hospitalization, medical problem, treatment, Medical bills etc) and medical certificate from a registered medical practitioner not below the rank of a Civil assistant surgeon.
3	Overall 65% and above but below Overall 75%	Overall Attendance	She /he have to appear for the exam as supplementary after gaining the required attendance.
4	Below Overall 65%	All Courses put together	Not eligible to write all the regular courses of that semester and will fall under redo category. The students have to redo the semester during the subsequent year.

For calculating the percentage of attendance; following norms are framed: For CA1 – From the reopening date to the day before CA1 examination For CA2 – From staring date of CA1 – the day before the CA2 examination For End semester – From starting date to last working day.

- If a student falls under Redo category, while rejoining he/she has to again pay the prescribed semester fees along with re-registration fees (Rs.500/-).

The following letter grade will appear in the mark sheet for every course for the attendance gained that course.

Performance	Letter Grade	% of Attendance
Outstanding	**O**	>=95%
Medium	**M**	>=80% and <95%
Satisfactory	**S**	>=75% and <80%

11. Minimum Requirements of Weightage for Passing a Course

I. Passing Minimum :

- Formative assessment : There is no passing minimum.
- Summative assessment:

  Course if she/he scores 40% minimum (includes theory cum lab)and in total 50% minimum by putting together of Formative and Summative.

II. Formative assessment : provision for improvement

All components pertaining to formative assessment will be offered. A student can take all or a few assessments. The assessment will take place from 4th week of the semester by paying Rs.100 as exam fee along with the consent of respective HoD. The reassessment will be conducted at the Department level, wherein HoD will act as the Chairperson. This improvement provision is not applicable for the current semester courses.

12. Calculation of Grade Points

University uses Grade Point Average (GPA), an internationally recognized calculation which is used to find the average result of all grades achieved.

The GPA for each semester is calculated by taking the sum of the products of grade points with the corresponding credits earned by the student divided by sum of credits in that semester. The formula for calculating GPA is given in equation (1).

$$GPA = \frac{\sum_i C_{ni} G_{ni}}{\sum_i C_{ni}} \qquad \text{---------} \qquad (1)$$

Cumulative Grade Point Average(CGPA) is the sum of the products of credits with grade points of all semesters divided by the sum of all credits of all semesters.The formula for calculating CGPA is given in equation (2).

$$CGPA = \frac{\sum_{n}\sum_{i} C_{ni}G_{ni}}{\sum_{n}\sum_{i} C_{ni}} \quad \text{--------} \quad (2)$$

Where *C* denotes subject *G* denotes grade point *n* denotes semester number and *I* denotes subject number.

13. Grade Versus Marks Distribution

Grade Letter	Grade Point	Performance	Actual Marks (A)
O	10	Outstanding	A≥91
A+	9	Excellent	81 ≤A<91
A	8	Very Good	71 ≤ A < 81
B+	7	Good	61≤A<71
B	6	Above Average	55≤A<61
C	5	Pass	50≤A< 55
U	0	Reappear/Absent	A < 50
W	0	Withdrawal	

Note:A passing grade starts with C for Engineering and Technology as the passing minimum is 50% marks and marks less than 50% is considered as U grade.

14. Eligibility for the Degree and Classification of Classes

- A student is eligible for the award of degree in M.Techprogramme if she/he earns a **total number of credits prescribed by the** programme **curriculum within the permitted duration of the** programme. The degree is classified as follows.

CGPA	**7.5 and above and passed in first attempt.** Maximum number of courses which can be withdrawn is three and withdrawal considered for only one semester of the programme.	First Class with Distinction
	6 (in any attempt) and above in *n* + 1 consecutive years where *n* is the number of years for a programme	First Class
	Less than 6	Second class

- In order to motivate the students towards research, it is mandatory for the award of the degree that each student should publish one research paper/article in conference/journal during their study period.

CGPA to % conversion is multiplication of CGPA with 10.

15. Supplementary Examinations

Students are permitted to appear for the supplementary examinations both during odd and even semester.

16. Rules for Discontinue from the Programme

A student can withdraw a semester from a programme temporarily or permanently due to whatsoever reasons. In that case she/he can rejoin the programme if she/he has temporarily discontinue from a programme. However the maximum number of years to complete the course is $n + 2 + 1$ (for exceptional cases) years.