Regulations 2020

Full time/Part time B.Tech. Programme

PERIYAR
MANIAMMAI
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited
think • innovate • transform

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1. Admission and Eligibility

1.1 For 1st year: A pass in the

a) +2 Level Examination in the 10+2 pattern of examination with Physics and Mathematics as compulsory subjects along with one of the subjects: "Chemistry / Biotechnology / Computer Science / Biology" (for B.Tech. Biotechnology; Physics, Chemistry and Biology are also eligible) or equivalent of any recognized central / state board of secondary school examination such as Central Board of Secondary Education (CBSE), New Delhi and Council for Indian School Certificate Examination, New Delhi.
b) Minimum 40% marks in above subject shall be taken together for admission to B.Tech. For Reserved Category candidates 40% marks.
c) Intermediate or two-year Pre – University Examination conducted by a recognized Board / University or
d) Final Examination of the two year course of the Joint Services wing of the National Defense Academy or
e) Any Public School / Board or University Examination in India recognized as equivalent to 10 +2 system or
f) H.S.C. Vocational Examination or
g) A pass grade in the Senior Secondary School Examinations conducted by the National Open School with a minimum of five subjects or
h) For lateral entry 3 or 4 year Diploma recognized by AICTE or a State Board of Technical Education or
i) Association of Indian Universities (AIU) equivalence certificate for International aspirants or
j) Any other equivalent qualification recognized by PMIST

1.2 Transfer from other University

A candidate from any other University can join at the beginning of III, V and VII semester (Without any standing arrears in I, II and III year) subject to the recommendations of Equivalence Committee and approval of Competent Authority of the University.

2. Duration of the Programme

The duration of B.Tech. programme will be four(*n*) years, divided into eight semesters. The duration of each semester will be of 90 teaching days. The maximum number of years to complete the course is *n* + 2 + (1 for exceptional cases) years. For lateral entry students *n*=3 years.

3. Definitions

Programme refers to B.Tech.
Course means a Theory or Practical subject that is normally studied in a semester, like Mathematics, Physics, Engineering Graphics, etc.,
University means Periyar Maniammai Institute of Science and Technology (PMIST), Deemed-to-be-University.
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4. Medium of Instruction

Medium of instruction is English.

5. B.Tech. Programmes Offered

1. Aerospace Engineering
2. Biotechnology
3. Civil Engineering
4. Computer Science and Engineering
5. Electronics and Communication Engineering
6. Electrical and Electronics Engineering
7. Mechanical Engineering

6. Curriculum and Credit System

The present curriculum of all the under graduate programmes are finalized based on the Outcome Based Education (OBE) in which the teaching, learning and evaluation process are focused towards the skills and ability acquired by the students during the course of their study. The Choice Based Credit System (CBCS) allows the students to earn their credits according to their interests. Professional elective and open elective courses are different categories of courses offered to impart choice based credit system. Open elective courses help the student to move horizontally between different branches of science and engineering. Professional elective courses help them to expand the knowledge in their field of engineering/technology. Student can take non-credit self-learning subjects offered in her/his department or any other department which is not considered for grading purpose.

Each course is assigned certain number of credits based on the following:

Contact period per week	**Credits**
1 Lecture Period	1
1 Tutorial Period	1
2 Practical Periods(Lab/Seminar/Project etc)	1

7. Programme Structure

The B.Tech. programme have maximum of 160 and minimum of 150 credits. The programme structure for the credit of 160 consists of courses drawn from different categories as given below. A variation in credits of each category could not be more than 20% without altering total minimum and maximum credits.

7.1 Categories of Courses:

Category	Suggested Breakup of Credits (Total 160)
Humanities and Social Sciences including Management Courses	12*
Basic Science Courses	25*
Engineering Science Courses including Workshop, Drawing, Basics of Electrical/Mechanical/Computer etc.	24*
Professional Core Courses	48*
Professional Elective Courses Relevant to Chosen Specialization/Branch	18*
Open Subjects – Electives from other Technical and /or Emerging Subjects	18*
Project Work, Seminar and Internship in Industry or Elsewhere	15*
Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Essence of Indian Traditional Knowledge]	(non-credit)
Total	**160***

*Minor variation is allowed as per need of the respective disciplines.

7.2 Minor Courses

All the Departments offer at least three minor courses in their curriculum (offered at specified semester) one credit each for improving the employability skills of the students. The credits earned through these courses will not be taken for CGPA or total credit required for completing a programme. However, a student has to pass all the courses for the award of Degree.

7.3 Character and Personality Development:

Participation in any one of the NSS/NCC/NSO/YRC programs during the course of their study is mandatory.

7.4 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 or 6 lecture courses and laboratory courses not exceeding 3. Each course may have credits assigned as per clause 6. However, the total number of courses per semester shall not exceed 10.

7.5 Field Visit/ Industrial Training

All the students should undergo Field Visit/ Industrial Training as part of their curriculum during the even semester (after completing end exams), as detailed below.

B.Tech.: III year – 30 days only

Each student should identify and undergo Field Visit/ Industrial Training. She/he has to maintain and submit the field record book along with the attendance duly signed by the authorized person from industries in which they have undergone training. The above training period shall be shared as 50:50 hours in the current / subsequent semester against their working days. Assessment of this inplant training is done in the following semester through viva-voce examination giving due weightage to record book, attendance and technical knowledge gained by the candidate during the training.

7.6 Industrial Visit

Every student is required to go for at least one Industrial Visit every year starting from the second year of the Programme. The Heads of Departments shall ensure that necessary arrangements are made in this regard.

7.7 Online Courses

7.7.1 Students may be permitted to credit online courses (which are provided with certificate) with the approval of Dean (Academics).
7.7.2 Open Electives (OE) courses can be chosen from online courses through Coursera, EdX, NPTEL, SWAYAM etc., provided, the number of online courses selected is not more than 20% of the courses offered during a semester.
7.7.3 All qualitative online courses chosen by the student monitored by the designated course coordinator will be approved by Dean (Academic) and ratified later by the respective Board of Studies.
7.7.4 The grade given by the agency will be taken as such without any modification. If the grade is not given and marks are provided, they will be converted to grades using grading method of the University.
7.7.5 If a student could not pass the online course other than OE, she/he can retake the end semester examinations conducted by PMIST in the subsequent semester and the marks scored will be converted to grades. For OE courses, the student can retake the same OE or different OE in the subsequent semester either by online or through regular stream.
7.7.6 If the organization offering online courses: (i) provides results as reappear, (ii) does not conduct Examination, (iii) does not provide marks or grades, then the candidate has to take end semester examination and the marks scored in that examination will be converted to grades as per PMIST examination regulations.
7.7.7 Attendance grade will be given for such courses based on their terminal hours computed by the course coordinator.

8. Requirement for End Semester Examinations

8.1 Overall attendance requirement

8.1.1. The minimum attendance required for appearing in the formative assessment CA1 and CA2 is 65%.
8.1.2. Maximum of five marks is allotted for attendance as one of the component in CA3

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

8.1.3. The minimum percentage of attendance required to appear for the end semester examinations is 75% (course wise).
8.1.4. If the percentage of attendance is between 65% and below 75% for the individual courses due to medical reasons; then the student is eligible to apply for condonation with a prescribed fee of Rs. 300/ per course and also to produce a medical certificate from a registered medical practitioner not below the rank of a Civil Assistant Surgeon
8.1.5. If the percentage of attendance is less than 75% and above 65% (overall attendance), she /he has to appear for the exam as supplementary after gaining the required attendance.
8.1.6. If the percentage of attendance is less than 65% (all courses put together) then the student will be categorized under "Redo candidate".
8.1.7. 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.
8.1.8. 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/-).

8.2 Passing Minimum

There is no passing minimum for FA. However, a student must secure:

8.2.1. Minimum 40% in SA (includes Theory cum Lab) and 50% in total (overall) for all UG Programmes in Engineering, Architecture, and all PG Programmes
8.2.2. Students are permitted to appear for the supplementary examinations both during odd and even semester.

8.3. 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.

8.4 Special Exams: Participation on behalf of University in curriculum / Sports Event correlated work or any other activity as recommended by the HOD/Authorities. This is applicable for all exams.

8.5 Grade Point versus Marks distribution for UG programmes

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

Performance	Letter Grade	% of Attendance
Outstanding	**O**	>=95%
Medium	**M**	>=85% and <95%
Satisfactory	**S**	>=80% and <85%

8.6 B.Tech. Honors/ First class with Honors

All the criteria as mentioned in First class with distinction are applicable. In addition to that, the student has to earn extra 10 credits (Minimum three courses) through MOOC/SWAYAM (Study Webs of Active –Learning for Young Aspiring Minds) platform/Minor course/Research paper/patents. The additional courses may be taken in their V, VI and VII semesters for B. Tech. Note: Should earn minimum 9 credits through MOOC courses and 1 credit through paper publications and patents

8.7 Provision of extra credits for the research papers and patents published/registered by the students:

For every research paper published in Science Citation Index Journals one credit may be awarded. Similarly, two credits may be awarded for an IPR through Indian Government Patent Office. In case of other papers or patents, the worthiness will be decided by the Dean (Academics), Dean (Research) and an expert from the field of work. The decision taken by the above team will be final. The credits earned by a student by this provision can be used to claim waiver against the credits fixed for Honors/Minor Courses.

8.8 Presentation and publishing of research articles

In order to motivate the students towards research, it is proposed that students should make presentation and publish research articles during their study period. It is made mandatory for the award of the degree and is applicable for students admitted from the academic year 2017-18 onwards.

a. B.Tech. – 2 articles (1 paper in National/International Journal and 1 in National or International Conference)
b. PG – Engineering and Technology – 2 papers (1 - National/International Journal and 1 - National/International conference)

9. Student Counselors

Each faculty member of the department will be attached with certain number of students as student counselor appointed by the respective head of the department to help the students in planning their courses of study and for general advice on the academic programme throughout their period of study. The student counselor also discuss with or inform the parents about the progress / performance of the students concerned and also monitor the academic/general performance of the students including attendance.

10. Assessment and Examination

10.1 Question paper pattern

Time :2 Hours				
CA 1 and 2	**No of questions**	**Marks per question**	**Total Marks**	**Type**
MCQ- 10	10	1	10	Compulsory
2 marks – 5	5	2	10	Compulsory
15 marks – 2	2	15	30	Either Or
Total			**50**	
End Semester (CA-4)				
MCQ- 10	10	1	10	Compulsory
2 marks – 5	2	2	10	Compulsory
15 marks – 4	4	15	60	Either Or
10 marks – 2	2	10	20	Compulsory
Total 100 Marks				**3 Hours**

* Continuous assessment - CA

10.2 Theory Courses F:S = 50:50 (Formative versus summative)

S. No	**Task**	**Notes**	**%**
1	Continuous assessment 1 (CA 1)	Will be conducted during 37th - 42th working day of a semester (Unit I and II)	15
2	Continuous assessment 2 (CA 2)	Will be conducted during 73th - 78th working day of a semester (Unit III and IV)	15
3	CA 3 such as Seminar, Assignment, Quiz, case study, critique, debate, demonstration, drawing, sketch, essay, exhibition, interview, journal / literature review, model, oral examination, presentation, portfolio, practicum, problem solving, projects, reflection, reports, self-assessment, etc.	0 to 82 Days (Minimum three CA-3 assessment)	20
4	CA 4- End Semester	After 90 Days (Equal weightage to all portions)	50

10.3 Laboratory Courses **70:30 (Formative versus summative)**

S. No	Task	Notes	%
1	CIA -1 (Based on observation Note and rubrics designed by lab teacher)	Assessment in all classes	30
2	CIA-2 (Lab Mid Exam)	After 45 – 50 Days	30
3	CIA -3 or EA-1- Product/Simulation /Design/Programme/Process	After 45 Days (Formative)	10
		After 90 days (Summative)	10
4	End semester exam	After 90 Days	20

10.4 Theory cum Laboratory: L T P - 3:0:1, 3:1:1 and 2:1:1

Sl.No			Task	Marks	Weightage in %	Weightage Formative	Weightage Summative
			Internal Assessment				
1	**Formative**	**TheoryPart**	CA 1	15	11.25	37.5	
2			CA2	15	11.25		
3			CA3 (Minimum 5 and maximum of 8 Assessment tools given by the course teacher)	20	15		
4		**Labpart**	CIA -1 (Based on observation Note and rubrics designed by lab teacher)	15	3.75	12.5	
5			CIA-2 (Mid Exam)	15	3.75		
6			CIA -3 Product/Simulation /Design/Programme/Process	20	5		
			External Assessment				
7	**Summative**	**Theory**	CA 4- End Semester Pattern (MCQ – 20% + Descriptive 80%)	50	37.5		37.5
8		**Lab Part**	CA4- End semester exam	50	12.5		12.5

			Total	200	100 (A)=B + C	50 (B)	50(C)

10.6 Theory cum Laboratory: L:T:P1:0:2F:S=60:40(Formative versus summative)

S.No	Task	Notes	%
1	CA-T 1 (Class Test- Descriptive 10)	Will be conducted after 45-50 working days	15
2	CA-T 1 (Class Test- Descriptive 10)	Will be conducted after 90 working days	10
3	CIA-L 1 (Lab Mid Exam)	After 45 – 50 Days	15
4	CIA-L 2 (Based on observation Note and rubrics designed by lab teacher)	During 1- 90 Days	10
5	CIA or EA – L 3- Product/Simulation /Design/Programme/Process	After 45 Days (Formative)	20
		After 90 Days (Summative)	10
6	EA-L 4 End semester exam (External Assessment)	After 90 Days	20

10.7. Project

Mini project shall be considered as prerequisite for the major project. This help student to extend her/his project results to publish and to claim even their patent.
The evaluation scheme for Continuous Internal Assessment is as follows.

Assessment Template for Minor project – VII Semester

Review 1	Review 2	Review 3	Review 4
15thDay	45thDay	75thDay	90thDay
CIA1	CIA2	CIA3	EA1
15%	15%	15%	15%

Assessment Template for Major project – VIII Semester

Review5	Review 6	(Review 7)	Review 8
30thDay	60thDay	75thDay	90thDay
CIA4	CIA5	CIA6	EA2
15%	15%	15%	15%

In the evaluation of minor and major projects the End Semester Examination carries 40%.

11. Awarding grades

11.1 The University follows absolute grading system.

Grade versus Marks distribution

Grade Letter	Grade Point	Performance	Actual Marks
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	

11.2 CGPA to % conversion is the multiplication of CGPA with 10.

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).

$$GPA = \frac{\sum_{i} C_{ni} G_{ni}}{\sum_{i} C_{ni}} \quad (1)$$

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).

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

Where C denotes course G denotes grade point n denotes semester number and i denotes course number.

13. Supplementary examinations

13.1 The students who have not passed the subject have to reappear for the supplementary exams in the subsequent semester. University offers fast track supplementary exams program in 8th semester where a student can take supplementary exams for the subjects of 8th semester in a month's time provided she/he have not any standing arrears.

13.2 Students who have not passed formative assessment under OBE scheme has to retake those assessments.

14. Rules for withdrawal from programme

A student can withdraw from a programme temporarily or permanently due to whatsoever reasons. In that case, she/he can rejoin the course if she/he has temporarily withdrawn from a programme. However, the maximum number of years to complete the programme is 7. In addition, a student can withdraw maximum of three courses in any semester and write the exam as supplementary. This withdrawal will not affect their degree classification. Only one time this withdrawal is permitted during her/his programme.

15. Rules for changing branches

15.1 Student willing to change the programme after completion of first year has to submit a requisition letter with their parents' consent, to Dean Academics through proper channel **within the 15 days from the last date of second semester examination**. The change can be offered to a maximum of 10% of sanctioned intake.

15.2 The equivalence committee will suggest and provide the list of additional courses to be undertaken by the student (if any).

16. Revaluation

16.1 Candidates who wish to apply for revaluation should first apply for photocopy of her/his answer script in the prescribed format through the Head of the Department and Dean of School to the Controller of Examination by paying Rs. 400/- (Rupees Four Hundred only) per script within 10 days after the result is declared.

16.2 After receiving the photocopy, the student can verify the copy for any discrepancy like total mistake and omission in the valuation.

16.3 If any discrepancy is noticed the same may be brought to the notice of the Controller of Examinations for remedial action.

16.4 The valuation in the photocopy of the answer script can also be verified by the subject expert and if the expert is convinced that the script deserves higher marks than awarded, she/he can recommend for applying revaluation.

16.5 The student can apply for revaluation in the prescribed form by paying
Rs.300/-(Rupees Three hundred only) per script towards revaluation fee within 15 days after the result is declared by submitting revaluation form duly signed by Head of the department and Dean of school.

17. Eligibility for the Degree

17.1 Minimum Requirements of marks for passing a course

Type of Assessment	**Engineering and Technology**
	UG B.Tech. Programme
Summative	40%
Total= Formative + Summative	50%

17.2 A student is eligible for award of degree in B.Tech. programme if she/he earns the **total number of credits prescribed by the programme curriculum within the permitted duration of the programme**.

17.3 In addition to the above conditions, participation in any one of the NSS/NCC/NSO/YRC during the course of their study is mandatory for award of a degree.

17.4 In order to motivate the students towards research, it is mandatory for the award of the degree that each student should publish two articles (one paper in National/International Journal and one in National or International Conference).

18. Classification of degree

Classification	CGPA	Remarks
First class with Honors	CGPA 9.0 and above	-
First Class with Distinction	CGPA 7.50 and above	All the courses are to be 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	CGPA 6.0 and above	CGPA 6.00 (in any attempt) and above in n + 1 consecutive years where n is the number of years for a programme
Second class	CGPA Less than 6.0	-

19. Identification and Support for Slow, Medium and Advanced Learners

19.1 Advanced learners, slow learners and medium learners are identified based on the CGPA

Category	CGPA
Advanced learners	7.5 and above
Medium learners	Above 6 and below 7.5
Slow learners	Less than 6

19.2 The advanced learners of III year/ 5th semester are given an option to choose their open elective course OE3, Professional Elective PE5 and PE 6, which they are supposed to do during 8th. By this a student can complete all theory subjects of 8th semester during 5th, 6th and 7th semesters and they are allowed to concentrate on their projects during 8th semester.

19.3 Medium learners and Slow Learners of III year are given special coaching/tutorials classes for the courses which they are currently undergoing.