

University of Calicut

M Tech Degree course Regulations w.e.f 2010 Admissions

University of Calicut

Degree of Master of Technology(M Tech)Regulations w.e.f 2010 Admission onwards.

1. General

Postgraduate Degree in Engineering leading to the award of Master Degree in appropriate branches shall extend over a period of 24 months consisting of 4 semesters. Duration is counted from the day of starting of classes of first semester. Credit system is adopted for the course. Grade point average is calculated on the basis of all courses taken by the student.

2. Eligibility for Admission

- a. The candidate should have passed the B.Tech. Course or equivalent from an institution approved by Calicut University and All India Council for Technical Education.
- b. The candidate shall have a B Tech degree in respective branch of Engineering as shown in table of clause 3 awarded by University of Calicut or Equivalent there to as approved by University of Calicut.
- c. The candidate should have a minimum 55 % aggregate mark in the Engineering Degree Examination. For SC/ST candidates a pass in the Engineering Degree course is sufficient.
- d. Candidates who have passed AMIE/AMIETE examination and satisfying the following conditions are also eligible for admission to M. Tech courses in Institutions under University of Calicut .
 - (i) They must have a valid GATE score.
 - (ii) A minimum mark of 55% for section B in AMIE/AMIETE examinations.
 - (iii) Minimum 3 years of professional experience in the field of specialization after acquiring the qualifying Degree.
- e. Candidates who have appeared for the Final Examinations may also apply provided the results are made available at the time of admission.
- f. Admission shall be normally restricted to those with valid GATE score on merit basis. However, this stipulation is relaxed in case of sponsored candidates.
- g. In case seats remain vacant due to lack of candidates with valid GATE score, candidates from KERALA state will be considered on the basis of merit in qualifying examination.
- h. Seats under the sponsored category can be filled separately in accordance with criteria prepared by selection committee as given in clause 5b.Candidates having three years experience in industries ,Govt. Departments or AICTE approved Engineering Colleges are

eligible under sponsored category. They should produce the necessary certificate such as original sponsorship certificate and original experience certificate. Selection of these candidates is based on marks in the qualifying examination and performance in the interview conducted by the selection committee in the ratio 80 : 20.

3. Equivalency

The Eligible Degree for admission to each programme is listed in the table below.

Name of M Tech Programme	Eligible Degree
Environmental Engineering	Degree in Civil/Mechanical/Chemical Engg
Production Engineering	Degree in Mechanical/Production/Industrial Engg./Automobile Engg.
Power Systems	Degree in Electrical and Electronics Engg(EEE)
Process Control	Degree in Chemical Engineering/Instrumentation and Control Engg./ Applied Electronics and Instrumentation / Electronics and Instrumentation
Thermal Engg.	Degree in Mechanical Engg/Automobile Engg
Embedded Systems	Electronics and Communication Engg/Electrical and Electronics Engg/ Applied Electronics and Instrumentation / Instrumentation and Control/Electronics and instrumentation/Electronics/Computer Science/ Computer Science and Engg./ Information Technology/ Biomedical Engg./Electronics and Biomedical Engg./Biomedical Instrumentation
Machine Design	Mechanical Engg.
Computer Science	Computer Science and Engg./ Information Technology

4. **Reservation of seats

- a. 5% of seats are reserved for candidates belonging to SEBC. Only candidates having annual income less than ...4... lakhs(limit subject to modification by Government orders from time to time) alone will be eligible for reservation under this category.

- b. 15% of seats are reserved for SC/ST candidates.
- c. The seats reserved for each category will be distributed among the eligible communities by observing the pattern of general reservation rules of the state.
- d. The additional seats available in each specialty are reserved exclusively for SC/ST candidates as per letter no 10/83/T2 dated 9/3/1983 from the Department of Education, Ministry of Education and Culture. These seats will not be filled from other category of candidates even if SC/ST candidates are not available.

** Subject to changes as per Government orders from time to time.

5. Selection of candidates.

- a. Selection of candidates for M Tech programme to Govt. /Aided Engineering Colleges under DTE will be supervised by selection committee constituted by Government.
- b. (i) Selection to affiliated self financing colleges will be supervised by a selection committee consisting of Director of Technical Education or his nominee, a nominee from the University of Calicut, Chairman of Board of studies in Engg.(PG)College Principal and Head of the Department of the respective branch of the Institution concerned.

(ii) In self financing colleges 50 % of the total seats shall be under merit quota and 50 % shall be under management quota. The admission to seats under merit quota shall be controlled by the Commissioner of Entrance Examinations,Kerala/Selection Committee after observing all reservation rules issued by Government from time to time.
- c. Selection will be made Institution wise based on GATE score alone. In case of tie weightage will be given to marks of qualifying examination.
- d. A rank list will be prepared based on the GATE score in branch of study and will be published in institutions as well as in website of the coordinating Institute at least 10 days before admission.
- e. Individual memo will be sent to candidates for counseling. Counseling and admission will be completed on the same date.
- f. If a candidate fails to report for counseling on the specified date his/her claim for selection will not be considered further.
- g. The additional seats reserved for SC/ST candidates will be filled first from the rank list.
- h. If sufficient GATE qualified candidates are not available the selection will be made from Keralite candidates based on the aggregate percentage of marks in their qualifying

examinations and such candidates have to produce a Nativity certificate. A grace mark of 5% will be awarded to candidates qualified from Universities in Kerala. Candidates qualified from University of Calicut will be awarded 15% of grace mark instead of 5 %.

- i. The sponsored seats will be filled up by admitting general category candidates in the absence of sponsored candidates. However candidates admitted against these vacancies will not be eligible for GATE scholarship.
 - j. Transfer certificate issued from the Institution last attended shall be produced at the time of counseling or admission.
 - k. The selection of candidates will be provisional and subject to verification of original documents by the Principal of the concerned Institution at the time of admission.
 - l. The regular classes of First year M Tech shall commence from the second week of September. A grace period of 3 months will be given to candidates who have secured admission through GATE to produce their original mark list and degree certificate. Otherwise their admission will be cancelled.
 - m.
 - i) There should be sufficient and qualified faculty members in the self financing colleges as recommended by the AICTE.
 - ii) There should be sufficient infrastructure in self financing colleges as recommended by the AICTE.
- University shall appoint a committee to ensure infrastructure and faculty position in self financing colleges.

6. Structure of the M Tech Programme

- a. The programme of instruction for each stream will consist of
 - (i) Core courses (Compulsory)
 - (ii) Elective courses
 - (iii) Laboratory/Seminar/Mini project and
 - (iv) Masters research project and dissertation

- b. The complete programme will be of 4 semester duration with at least 75 working days in each semester. Academic programme in each semester will consist of course work and /or project work as specified for each specialization. The total contact hours is 30 hours per week including departmental assistance.
- c. Every stream of specialization in the programme will have a curriculum and syllabi for the courses. The curriculum shall be so drawn up that the minimum number of credits for successful completion of the M Tech programme of any stream is 75.
- d. Credits will be assigned to the courses by following general pattern as given in table 1.
- e. Table 1: Distribution of credits for various course work

Course work	Weekly hours	Creditsc allotted
Theory Subjects	4	4
Seminar	2	2
Laboratory	3	2
Mini Project	-	2
Industrial Training/Interaction	-	1
Masters Research Project-Phase I	-	6
Masters Research Project and Dissertation-Phase II	-	12

- f. A student will have to register in all the **core course** listed in the curriculum of his/her selected area of specialization and successfully complete all of them.
- g. **Electives** will have to be taken from the courses offered by the department in that particular semester from among the list of approved courses.
- h. The medium of instruction, examination, seminar and project report will be in English.

7. Distribution of credits among 4 semesters

Semester	Course work content	Total credits allotted	Total credits allotted semester wise
1	5 Theory subjects	5X4=20	24
	seminar	1X2=2	
	Laboratory	1X2=2	
2	5 Theory subjects	5X4=20	24
	seminar	1X2=2	
	Laboratory/Mini Project	1X2=2	
3	2 Theory subjects	2X4=8	15
	Industrial Training	1X1=1	
	Masters Research Project Phase I	1X6=6	
4	Masters Research Project Phase II & Dissertation	1X12=12	12
	Total credits in all 4 semesters		75

8. Details of various committees and responsibilities.

The entire academic matters relating to P G courses in the Institute / College will be managed by Dean P G studies. In colleges where Dean of PG studies is not available academic matters relating to P G courses will be managed by Principal. The Principal may appoint a Chief-Coordinator from among the Course Coordinators (refer 8a) to assist him/her in academic matters.

Academic Committee.

The Academic committee for the PG courses of the concerned Institution will comprise of

- (i) Dean of P G studies / Principal
- (ii) Heads of all Departments of P G courses
- (iii) Course coordinators

a) Course Coordinator

Each Department will have a Professor/Asst. Professor other than HOD as Course Coordinator for each M Tech Programme. The responsibilities of the Course Coordinator are

1. To help the students in planning and getting general advice on academic programme.
2. To keep a record of the academic activities of students registered for the particular M Tech programme

b) Department Committee

Each Department of every Institution offering P G Course will have a Department committee to look after P G course. This committee will consists of

1. Head of the Department
2. Course Coordinators

c)Evaluation Committee

Each Dept. of every Institution offering P G courses will constitute an Evaluation committee to evaluate seminars, Mini-Projects, Pre submission seminar for Masters research project etc. consisting of at least 3 faculty members. The internal guide and another expert in the area of specialization shall be the 2 essential members of this committee.

d)Class Committee

For semesters I, 2 and 3 a class committee for each programme will be constituted by HOD as follows.

Chairman: Course coordinator of the concerned M Tech Programme

Members: 1. All teachers handling classes for the particular semester.

2. One student member from the class.

The term of class committee shall be one semester.

The basic responsibility of class committee is

1. To review periodically the progress of the classes to discuss problems concerning curriculum and syllabi and the conduct of the classes.
2. The type of assessment for the course will be decided by the teacher in consultation with class committee and will be announced to the students at the beginning of the semester.
3. Each class committee will communicate its recommendations to the HOD and the Dean of P G studies/ Principal.
4. The class committee is required to meet at least twice in a semester.

9. Course work Content

Semester 1

The student has to credit 5 theory subjects – 4 core subjects and one Elective. One core subject will be from area of Mathematics. In addition the student has to take up one seminar and one Lab.

Semester 2

The student has to credit 5 theory subjects, one seminar, and one lab/Mini project. Among 5 Theory subjects, 3 subjects are offered as core, and two as Electives.

Semester 3

The student has to credit 2 theory subjects from the two groups of Electives listed. The student has to undergo an industrial training of minimum two weeks duration during the semester break after semester 2 and complete that within 15 calendar days from the start of semester 3.

The student is required to undertake the Masters Research Project Phase I during 3rd semester and the same is continued in the 4th semester (Phase II). It comprises of Preliminary Thesis work, two reviews of the work and the submission of Preliminary report. First review would highlight the topic, objectives, methodology and expected results. The first review shall be conducted in first half of this semester. Second review comprises of the presentation of the work completed, preliminary report and scope of work which is to be completed in the 4th semester.

Weightage for the credits for Masters research project –phase I

Internal evaluation of the Project work by the Guide: 50%

Internal evaluation of the Project work by the Evaluation committee (ESE): 50%

Semester 4

In 4th semester there will be only Project work. This is the continuation of the work done in 3rd semester. There is a review in the middle of fourth semester to evaluate the progress of the project work. Towards the end of the semester there would be a pre submission presentation to assess the quality and quantum of the work by the Evaluation committee. This would be the prequalifying exercise for the students for getting approval by the Department committee for the submission of Thesis. At least one Technical paper is to be prepared for possible publication in journal or conferences. The Technical paper is to be submitted along with the Thesis . The final evaluation of

the Project will be external evaluation. The credits allotted may be proportionally distributed between external and internal evaluation as follows.

Internal evaluation of the Project work by the Guide: 25%

Internal evaluation of the Project work by the Evaluation Committee: 25%

Final evaluation of the Dissertation by the External Examiner: 25%

Project viva voce by the External and Internal Examiners: 25%

10. Facility for students to do project work outside the Parent Institution:

As far as possible the students shall be encouraged to do their project work in the parent institute itself. However, if found essential, they may be permitted to continue their project outside the parent institute, **with the approval of the Department committee** . For students who are availing this facility, the following conditions are to be observed.

- i) The students have to get the prior approval from the Department committee for availing this facility as well as choice of the institution/industry/R&D organization with which the students are associated for continuing their project work. They have to get this approval in the 3rd semester itself.
- ii) If they are doing their project work in an educational institution then the institution is to be preferably an institution of national repute like IITs, IISc etc.
- iii) Students availing this facility should continue as regular student of the parent institution itself.
- iv) They should have an external as well as an internal guide. The internal guide should belong to the parent institution and external guide should be from the institution/industry/R&D organization with which the student is associated for doing the project work.
- v) Student has to furnish a certificate from the external guide stating the willingness to supervise the Thesis work with the institution/industry/R&D organization with which the student is

associated for doing his/her project work and has to submit the same for the approval of the Department committee at the beginning of the third semester.

- vi) The student has to furnish his/her monthly progress as well as attendance report signed by the external guide.
- vii) The external guide and internal guide are to be preferably present during all stages of evaluation of the project work. In case the external guide is not present, the internal guide can alone take the responsibility of conducting the evaluation.

11. Registration and Enrollment.

- α . For the first semester every student has to enroll and register for the courses he/she intends to undergo on a specified date notified to the student. The concerned Programme coordinator/Faculty Advisor will guide the students in registration process.
- β . For the subsequent semesters registration for the courses will be done by Course coordinator during a specified week before the end semester examination of the previous semester. The registration card will give details of the core and elective courses, the project and seminar to be taken in a semester with the number of credits. The student will consult his/her Course coordinator for choice of courses. The registration card is filled in triplicate and signed by the student and Course coordinator .
- χ . A student has to pay the semester fees before the day of registration or as per the schedule announced by the Dean/ Principal.
- δ . From the second semester onwards ***all students have to enroll on a specified day at the beginning of a semester.*** A student will become eligible for enrollment only if he/she satisfies requirements in section 11.g and in addition he/she has cleared all the dues to institute, hostel and the library up to the end of the previous semester and he/she is not debarred from enrollment .

ε. M Tech gate scholarship to eligible students will be paid for a maximum period of 24 months only as per existing AICTE rules/Govt. of India rules.

φ. In extra ordinary circumstances like medical grounds a student may be permitted to withdraw from a semester completely. A student will be permitted to withdraw from the programme only for a maximum continuous period of two semesters.

γ. Minimum requirements to continue the Programme.

- i) A student should have a minimum 80 % of overall attendance in each semester to register for the end semester examination.
- ii) A student should have registered for the end semester examination at the end of every semester.
- iii) A student should have earned not less than 26 credits at the end of second semester and 36 at the end of third semester.
- iv) A student will be promoted to **second** semester only if he/she satisfies conditions in clauses 11 g i and 11g ii
- v) A student will be promoted to the **next** higher semesters only if he/she satisfies conditions in clauses 11 g i , 11g ii and 11giii.
- vi) It shall open to the Vice Chancellor to grant condonation of shortage of attendance on the recommendation of the Head of the Institute in accordance with the following norms.
 - The shortage shall not be more than 10%
 - The shortage shall not be condoned more than once during the entire course

- *Candidate who is not eligible for condonation of shortage of attendance shall repeat the semester.*

η. Maximum duration of the programme

A student is expected to complete the M Tech programme in **4 semesters**. In case of students who do not complete their Project work in the 4th semester, they will be permitted to complete the project work and submit the report in the subsequent semester. The date of completion of the project work and the date of viva voce examination will be indicated in the grade card for the subsequent semester. The student shall complete the M Tech Degree within five academic years from the date of admission to the M Tech Programme.

ι. Discipline.

Every student is required to observe disciplined and decorous behavior both inside and outside the campus and should not indulge in any activity which will tend to bring down the prestige of the institute. Any act of indiscipline reported to Dean of P G studies/Principal will be referred to the College council. The College council will investigate the charges and will decide suitable punishment if it finds the charges substantiated.

φ. Attendance.

- i) Every teaching staff member handling a class will take attendance up to the last instruction day in the semester. Overall attendance will be calculated and displayed within a week after the last working day.

κ. Leave Rules.

- i) All M Tech students should apply to the HOD for leave stating the reasons whenever they are not in a position to attend classes/project work. They will not be eligible for GATE scholarship for the period of absence if it is unauthorized leave even if they have not fully utilized the eligible leave.
- ii) **Students are eligible for leave of 30 days in a year** which will be regularized 15 days per semester with a provision of carryover from first to second and third to fourth semesters. (i.e. unutilized leave from first year cannot be carried over to second year). The intervening holidays will be treated as part of leave with provision of suffixing and prefixing holidays.

12. Evaluation Process:

In the first semester, second semester and third semester, all the subjects to be credited are evaluated through continuous assessment procedure and end semester examination. **The end semester examination for all the semesters , except the first semester would be done at the respective colleges as outlined below.** The end semester examination for the first semester will be conducted by the University.

a) Assessment Procedure.

For Theory Subjects: Internal continuous assessments will be made during the semester. The internal continuous assessment may be in the form of periodical tests, assignments, seminars or a combination of all, whichever suits best. The assessment details as decided at the class

committee will be announced to the students right at the beginning of the semester by the teacher. There will be a minimum of two tests per subject.

- b) The seminars, project, Industrial training will be evaluated by the Evaluation committee. For the project and Industrial training, the students are required to submit a report of the work done/training undergone and present the contents of the report before the committee which will be evaluated. The laboratory work will be evaluated by the staff member(s) concerned.
- c) In the third semester, Masters Research Project Phase I will be evaluated by the Evaluation committee. The internal evaluation of the project in the IV semester would be done by the Evaluation committee. Final evaluation of the project and dissertation would be conducted by the Guide and an External Examiner appointed by the University of Calicut.

d) End Semester Examination

There will be one End semester examination of 3 hours duration in each lecture based subject. For the End semester examination the student has to register in the university by remitting the examination fees.

e) Project Evaluation

Project Evaluation will be taken up only after the student completes all the core, elective as well as other course requirements satisfactorily.

f) Weightage

The following will be the weightages for the different subjects.

a. Theory Subjects

Internal continuous assessment : 50%

End Semester Examination : 50%

b. Laboratory based Subjects

internal continuous assessment : 100%

g) Normalisation

The marks obtained in the internal continuous assessment of theory subjects and laboratory based subjects and end semester examinations of 2nd and 3rd semesters shall be normalised as follows .

- (i) If the class average obtained in Internal Continuous Assessment of a theory subject is greater than 80 % it shall be normalised to 80 % .
- (ii) If the class average obtained in Internal Continuous Assessment of a lab based subject is greater than 75 % it shall be normalised to 75 % .
- (iii) If the class average obtained in End Semester Examination of a theory subject of 2nd/ 3 rd semester is greater than 70 % it shall be normalised to 70 % .

The existing normalization procedure shall be applied.

h) Make-up Examination

The following categories are eligible for make up examination.

(i) Students who have missed internal continuous assessments on valid reasons should apply to the concerned teacher the reasons for the absence and teacher shall consider these requests suitably.

(ii) Except for the first semester, those students who have failed in the end semester examinations or missed the end semester examination on valid reasons, should make an application to the Course Coordinator within 10 days from the date of missed examination or within 5 days from the publication of results (whichever is earlier). Permission to sit for a makeup examination in the subject(s) in the case of students who missed the examination is given under exceptional circumstances like hospitalization or accident to the student. However these students will not be eligible for **S grade**.

A student who misses this makeup examination will not be given another makeup examination.

i) Minimum for a Pass

A candidate who secures not less than 40 % marks in a subject at the end semester examination and not less than 50 % of the total marks assigned to the subject, shall be declared to have passed the examination in that subject.

j) A student is awarded a letter grade in each course he/she has registered for, indicating his/her overall performance in that course. There are eight letter grades **S, A, B, C, D and U**. The correspondence between range of percentage of marks, grades and points (on a 10-point scale) is given below.

Grading

Range of percentage of marks	Grade	Points
90 - 100	S	10
80 - 89	A	9
70 - 79	B	8
60 - 69	C	7
50 - 59	D	6
Below 50	U	0

A student is deemed to have completed a subject successfully and earned the credit if he/she secures a letter grade other than U.

A letter grade U in any subject implies failure in that subject. A subject successfully completed cannot be repeated.

k) Methods of awarding grades.

i) For the first semester, University will award grades based on percentage of marks obtained in each subject as per clause 12j. The percentage of marks is calculated considering internal continuous assessment and end semester examination marks put together.

ii) For second semester onwards grades will be awarded as per the following procedure:

A final meeting of the academic committee will be convened within **7 days after the last day of the end semester examination. The letter grades to be awarded** to the students for different subject will be finalized at this meeting. Two copies of the result sheets for each subject containing grade and two copies with absolute marks and the final grade should be submitted by the teacher to the concerned Academic Committee Chairman.

After the finalization of the grades at the Academic Committee meeting, one copy with the absolute marks and one without the absolute marks but having only the grades will be forwarded by the Academic Committee Chairman to the Principal.

l) Declaration of results

i) The letter grades awarded to the students in each subject will be put on the departmental notice board soon after the final Academic Committee meeting.

In case a student feels aggrieved, he/she can contact the concerned teachers for a second look at his /her performance but not later than two weeks from the commencement of the semester following the announcement of the results. The student shall have access to his/her answer paper(s) in the end semester examination which may be shown to him/her by the teacher(s) concerned.

If the teacher feels that the case is genuine he/she may reexamine and forward the revised grade, if any, to the Course Coordinator through the Chairman of the Class Committee with justification for the revision and with the intimation to Head of the Department.

- ii) The U grade once awarded stays in the record of the student and is deleted when he/she completes the subject later, indicating also the number of attempts made in that course. The CGPA will be accordingly revised deleting 'U' as the case may be in the earlier attempts in that course. The grade acquired by the student later will be indicated in the grade card of the appropriate semester.

m) Grade Card

1. The grade card will be issued at the end of the semester to each student by the University of Calicut based on the recommendation of the Principal.

It will contain the following:

- (a) The course code, title of the subject/project and grade secured by the candidate for each course registered for that semester.
- (b) Performance in each subject by the letter grade obtained vide 12i and 12j.
- (c) The total number of credits earned by the student up to the end of that semester.
- (d) Grade Point Average (GPA) of all the courses taken during a semester if he successfully completed all the courses in that semester.

(e) The Cumulative Grade point Average (CGPA) of all the courses taken from the first semester onwards .

(f) Date of admission, Date of completion of the project and date of viva voce.

2. The Grade Point Average (**GPA**) will be calculated by the formula

$$\mathbf{GPA} = \frac{\sum(C \times GP)}{\sum C}$$

where **C** = credit for the course, **GP** = the grade point obtained for the course and the sum is over all the courses taken in that semester.

For the Cumulative Grade Point Average (CGPA) a similar formula is used except that the sum is over all the courses taken in all the semesters completed up to the point in time.

3. No rank will be awarded to the students at the end of M Tech course.
4. All candidates who qualify for the degree and secure not less than a CGPA of 6.5 of all the semesters shall be declared to have passed the M Tech Degree examination in First Class
5. All candidates who qualify for the degree and secure not less than a CGPA of 8 of all the semesters shall be declared to have passed the M Tech Degree examination in First Class with Distinction.

n) Eligibility for the award of M Tech Programme

A student shall be declared to be eligible for the award of M Tech degree if he/she

- a) Registered and successfully completed all the course work and the project work.

- b) successfully acquired the minimum number of credits prescribed in the curriculum in the given stream within the stipulated time vide 11.h
- c) No dues to college.
- d) No disciplinary action is pending against him/her.

13 Revision of regulation

Notwithstanding all that has been stated above the University of Calicut has the right to modify any of the regulations, scheme of studies, Examination and syllabi from to time.