

MASTER OF TECHNOLOGY (M.TECH) PROGRAMME



POLICIES AND PROCEDURES

FACULTY OF ENGINEERING
JULY, 2018

PREAMBLE

In order to maintain uniformity and ensure a high quality of Post Graduate Programmes, the University-Level Committee for Post Graduate Programmes (UL-CPGP) proposes the following Policies and Procedures.

1. The word “University” means “Amrita Vishwa Vidyapeetham University under section 3 of the UGC Act 1956”, unless context otherwise requires.
2. For the purpose of this document, Department/ Department Chairs also include Centre/ Centre Heads, except when the context otherwise requires.
3. M.Tech Programmes may be offered only by Departments/ Centres that have received explicit approval to do so. The specialization of an M.Tech Programme and the intake to each specialization will be decided by the University.
4. An M.Tech Programme will be known as: *M.Tech. in <Name of Specialization>*, e.g, *M.Tech in Automotive Engineering*. The name of the Department offering the programme shall not be included in the Degree Certificate.
5. The Dean for Faculty of Engineering or similar academic rank, as appointed by the Vice Chancellor, hereafter referred to as Dean Engineering, has primary responsibility over all M.Tech programmes, and shall report all major actions to the Vice Chancellor for approval.
6. Each campus offering one or more M.Tech Programmes shall have the Head of the School, respective Department Chairs and PGP Chair/ Co-chair with primary responsibility for the conduct of the programmes in that campus in accordance with the policies and procedures outlined in this document.
7. The PGP Chair/ Co-Chairs shall work closely with their respective Department Chairs and the Head of the School, to ensure the successful conduct of the programmes, and shall report all major actions to the Dean Engineering, through the Head of the School/ PGP Co-Chair, for approval.
8. The award of M.Tech degree shall be in accordance with the Policies and Procedures outlined in this document as well as other ordinances, rules, and regulations of the University.
9. An M.Tech student may petition the PGP Chair for a waiver/ substitution of any requirement. The petition, if deserving consideration, may be escalated to the PGP Dean and the Vice Chancellor, through the Head of the School. The decision of the Vice Chancellor will be final and binding.
10. The Academic Council and the Board of Management alone will have the power to make amendments to these rules and regulations from time to time as they deem appropriate.

M.Tech at a Glance

1. M.Tech students are admitted normally as full-time students. In order to be eligible for admission, an applicant should have a strong academic record (minimum 60% average) with either a B.E/ B.Tech or equivalent Bachelor's degree in Engineering or an MCA/ M.Sc or equivalent Master's degree in Science. Applicants with excellent test scores on standardized graduate aptitude tests such as GATE will be given preference.
2. The M.Tech degree consists of 42 to 44 credits of prescribed course-work and 22 credits of Dissertation research, for a total of 64 to 66 credits. All courses shall be University-approved courses.
3. A credit-based continuous assessment pattern will be followed, with one credit for each lecture period per week, one credit for each tutorial period per week, and one credit for each laboratory course of two or three periods per week.
4. Every student is required to write, based upon their Dissertation, a scholarly research paper targeted at a Scopus-indexed conference or journal. The submission to the conference/ journal should be made by the student's Dissertation Advisor after written consent by the Department Chair.
5. The duration of the M.Tech program shall normally be four semesters (2 years).
6. Students are expected to carry out all work with academic integrity and should abide by the code of conduct expected of all students of the University.
7. The medium of instruction for all M.Tech courses shall be English.

The remainder of this document is divided into three main sections:

- (I) General policies that govern M.Tech Programmes, primarily of interest to PGP Chairs, Department Chairs and Faculty;
- (II) Academic Requirements to be fulfilled by students; and
- (III) Code of Conduct expected of students.

1. PROGRAMME POLICIES

This section deals with Admission Procedure, Board of Studies, Course Committees and Chief Mentor.

1.1 Admission

The advertisement for admission should clearly indicate the minimum qualification for the different programmes, dates for the commencement of the issue of application and receipt of completed application, date for entrance examination and possible venues for the entrance examination.

Applications will be issued and received until the last date notified for the receipt of completed application.

Candidates with valid GATE scores will be exempted from the entrance examination for M.Tech Programmes. If the GATE score is high, they will be offered direct admission.

The short-listed Non-GATE candidates will have to appear for entrance test and/ or interviews.

The merit list for admission will be based on the performance of the candidates in their qualifying Examination and in the Entrance Test and/ or Interviews.

The Selection Committee will consist of a minimum of three persons and chaired by the Chair/ Vice Chair of the Department. Depending on the minimum qualifications specified, the applications of certain M.Tech Programmes (e.g., computing-related programmes) may be evaluated jointly by the respective selection committees; however, a separate ranking of candidates for each M.Tech Programme should be prepared.

1.2 Board of Studies

The curricula and course syllabi for an M.Tech programme shall be formulated initially and updated once in two years based upon recommendations from the Board of Studies for the programme concerned.

The Board of Studies consists of 10-12 members, with at least one member from each of the following groups: an international expert from a university outside India; an expert from a leading Indian university (such as IIT, IISc, NIT); an expert from industry; a faculty member from each campus offering the programme or a closely related programme; and an alumnus who excelled in the programme.

Elective courses may be added to the curricula by the PGP Co-Chair, at any time with the approval of the Dean Engineering.

1.3 Course Committees

While the Board of Studies oversees the overall M.Tech curriculum and course syllabi, each course that is offered is monitored by a Course Committee and Chief Mentor. This committee will consist of mentors, one from each campus, nominated by the respective Department Chairs of the Campus. The Chief Mentor is nominated by the Dean Engineering and could be one of the campus mentors for the course or could be an additional person. In addition, there will be student representatives, one for each Campus, who will be invited for all meetings except those dealing with question papers and other confidential matters.

All campuses offering a course will be governed by the same syllabus and the course offering will be monitored by a Course Committee and chaired by the Chief Mentor. The Course Committee shall meet at the beginning of the semester to finalise the teaching program as well as evaluation pattern.

Campuses have local autonomy to set their own question papers for periodical tests and the final exam, but prior approval from the Chief Mentor is required before any question paper can be given at any campus. Therefore, campus-level course mentors should prepare question papers in advance so that the Chief Mentor is given adequate time for review and providing feedback. After a question paper is finalized, the Chief Mentor will forward the same to the Deputy Controller at each campus who in turn will oversee the duplication and distribution of the question paper.

2. ACADEMIC REQUIREMENTS FOR STUDENTS

All students are expected to conform to the regular academic requirements of the University. This involves registering for courses, attending classes regularly, doing assignments in a timely manner, appearing for examinations, etc., and also conforming to the rules, regulations and practice accepted in the University.

2.1 Course Registration

Upon admission, every student will be assigned a Faculty Advisor by the Chairman of the Department concerned. The faculty advisors will advise the students in all academic activities including registration, selection of electives, projects, etc.

Students are required to register for courses (including Dissertation Research) within the stipulated time through AUMS. Any violation may lead to non-acceptance of the course registration.

A student is permitted to register for courses if and only if he/she has:

- Paid all fees and has no dues to the University
- Has maintained the progress as required by the University
- Has completed pre-requisite courses, if prescribed
- Has no disciplinary action pending against him/her

Every student will be given access on the Amrita intranet to all M.Tech Programmes, including the relevant policies, procedures, curricula, and course syllabi. Students doing an M.Tech programme in one specialization can take courses offered in another specialization with prior approval of the faculty advisor and Department Chair concerned.

Except for the first semester, registration for a given semester shall be done during a week specified before the end-semester examination of the previous semester. The consent of the faculty advisor and the course instructor are necessary for registration.

2.2 Duration of Programme

The normal duration of the M.Tech Programme is 2 years (4 semesters). In the exceptional case of the students who are not in a position to complete the requirements within two years, an extension of stay by one or two semesters, as needed, may be granted by the PGP Chair/ PGP Co-Chair. Such students

need to pay the fees like any other student, once again register for the course(s) and successfully complete them as per the normal requirements.

2.3 Attendance and Leave

Attendance: Class attendance will be marked by the teacher during every period of a course. Finalization of attendance for every course shall be done three working days before the last instruction day of the semester. Any student failing to secure a minimum of 75% attendance in a course will not be eligible to appear for the end semester examination in that course. The names of students not eligible to appear for the examination will be published.

If the attendance of a student falls short of 75% in any course due to continuous absence caused by accident, prolonged illness, or unforeseen circumstances, such case may be considered by the concerned PGP Chair/ Principal for condonation of absence based on the request of the student and supported by required documents and recommendation of the class advisor and Department Chair. However, in such cases, the student must have duly applied for leave in time and got it sanctioned. Condonation will be considered only in the case of those students who have proved themselves to be otherwise regular by attending at least 75% of the class during the semester excluding the period of long leave. Any student who has missed classes for genuine reasons (including on duty leave) will have to submit the missed assignments (possibly on holidays or late evenings) as prescribed by the faculty, to make up for the missed classes. The students will be eligible for the waiver/ on duty leave if and only if they complete the extra work load to the satisfaction of the faculty concerned and, the faculty concerned certifies accordingly in the final leave application of the student.

Leave: It is mandatory that students apply in the prescribed form before proceeding on leave. A leave letter recommended by the class advisor shall be submitted to the Department Chair who may normally grant the leave. Unauthorized absence will be treated as breach of discipline. Request for leave for more than three consecutive days on medical grounds must be supported by a proper medical certificate. In non-medical cases, requests for leave for more than three consecutive days must be countersigned by the parent/ guardian. Leave granted will be counted neither as attendance, nor for condonation purposes.

Students going on official duties such as representing the School for sports and cultural activities, or presenting papers in seminars will be eligible for “duty leave” on the recommendation by the faculty advisor and the concerned Department Chair. Duty leave will be counted as equivalent to attendance for administrative purposes which will be limited to five working days per semester, provided the information is sent to all the faculty members concerned at least one week in advance.

2.4 Course Evaluation

In theory courses, which are taught primarily in the lecture mode, 50% weightage will be given to continuous assessment (sessionals) and 50% for the end-semester (final) examination. For continuous assessment, there will be two tests, whose dates will be given by the Controller of Examination and published in the handbook, in addition to a number of assignments.

In the case of laboratory courses and practicals, 70% weightage will be given to continuous assessment and 30% for end-semester examination. The weights for the components of continuous assessment will be decided by the course committee at the beginning of the semester.

It is mandatory that students appear for the end-semester examination for the completion of a course.

2.5 Supplementary Examination

Supplementary Examinations will be held for all courses, during both the odd and even semesters.

Students who have failed in a course can register and appear for the same in the supplementary Examination, conducted at the end of the subsequent semester(s). In addition, those students who could not appear for the end-semester examination due to illness or reasons beyond their control will also be permitted to appear for the supplementary examinations.

The Continuous Assessment marks earned by the student, for the course, shall be carried over to the Supplementary examination.

Students who have passed a course are not permitted to appear for the supplementary Examination for improving their grades. Supplementary examinations are available only for students failed in the course(s).

The students who have put in insufficient attendance shall be awarded 'FA' grade in the course(s). Those who secure an 'FA' grade, will not be allowed to appear for the supplementary examination and will have to re-register for the course.

In re-registering for courses, it is mandatory to successfully complete the same core course. However, in the case of electives, the PGP Chair may approve an equivalent course on the recommendation of the Faculty Advisor and Department Chair.

2.6 Dissertation Research and Research Paper

Every M.Tech student is required to register for a total of 20 credits of Dissertation Research, which will be divided roughly as 10 credits in semester III and 10 credits in semester IV. The Dissertation Research must be carried out under an Amrita faculty member, either within or outside the student's department, and that faculty member will be referred to as the student's Dissertation Advisor.

Towards the end of completing the Dissertation Research, the student is required to submit a Dissertation Report, documenting all results, including system design, implementation, theory, experiments, and performance evaluation, as applicable. The Dissertation Report is submitted to the Dissertation Advisor. Where applicable, an evaluation (qualitative or quantitative) by a Dissertation co-Advisor will be also taken into account by the Dissertation Advisor.

An **important requirement** of Dissertation Research is the submission of a Research Paper to a Scopus-indexed conference proceedings or journal. A research paper describes the motivation and significance of the problem being addressed; the background and related literature for the research;

the proposed approach, concepts, and system design; experimental results and contributions; conclusions and directions for further research; and references cited.

Submission of the Research Paper to a Scopus-indexed conference/ journal should be made by the Dissertation Advisor only after obtaining written consent from the Department Chair. Students should not submit papers on their own to conferences/ journals without approval from their Advisor and Department Chair.

All publications based upon the Dissertation research should list the name of the Dissertation Advisor and Co-Advisor (if any), with their consent, in addition to the M.Tech student's name. The Amrita affiliation in conference/journal papers should be written as follows:

Names of Authors
Name of Department/ Centre/ School
Name of Campus
Amrita Vishwa Vidyapeetham (University)

The Department Chair will invite external experts to help the final evaluation of dissertations. The Chair will assign the M.Tech student reports to a Committee consisting of all Dissertation Advisor(s) and senior faculty of the Department. The Department Chair will normally serve as Chair of this Committee, unless he/she is also a Dissertation Advisor, in which case the Vice Chair of the Department will head the Committee.

There are two parts to the evaluation. In the first part which is open to public, all M.Tech students are required to briefly present their work. In the second, which is closed-door (with only the Committee members present), a thorough discussion about the dissertation will take place, at the conclusion of which, for each student, the Committee will assign a numerical score out of a maximum of hundred.

After completing the evaluation of all M.Tech students in a specialization, all Dissertation Advisors in that specialization and the Department Chair will meet and assign every student a letter grade. If a dissertation is not satisfactory, the student will be asked to continue the dissertation and appear for the assessment later and an "I" grade will be given.

2.7 Grading

Based on the performance in each course, a student is awarded, at the end of the semester, a letter grade in each of the courses registered, in a ten point scale.

The letter grades, the corresponding grade points and the ratings are as follows:

<i>Letter Grade</i>	<i>Grade Points</i>	<i>Ratings</i>
O	10.00	Outstanding
A+	9.50	Excellent
A	9.00	Very Good
B+	8.00	Good
B	7.00	Above Average

C	6.00	Average
P	5.00	Pass
F	0.00	Fail
FA	0.00	Failed due to insufficient
attendance		
I	0.00	Incomplete (awarded only
for Lab Courses /Project/ Seminar)		
W	-	Withheld

Note:

The 'I' grade may be given for Laboratory courses, Seminars, and Dissertation Research. It will be subsequently changed to an appropriate grade when the student passes the supplementary examination.

Semester Grade Point Average (SGPA)

On completion of a semester, each student is assigned Semester Grade Point Average (SGPA) which is computed as below for all courses registered by the student during that semester.

$$SGPA = \frac{\sum (C_i \times GP_i)}{\sum C_i}$$

where C_i is the number of credits for i^{th} course in that semester and GP_i is the grade points earned by the student for that course.

Cumulative Grade Point Average (CGPA)

The overall performance of a student at any stage of the M.Tech. program is evaluated by the Cumulative Grade Point Average (CGPA) upto that point of time.

$$CGPA = \frac{\sum (C_i \times GP_i)}{\sum C_i}$$

where C_i is the number of credits for i^{th} course in any semester and GP_i is the grade points earned by the student for that course. The summation is over all the courses registered by the student and evaluated during all the semesters up to that point of time, including the failed courses. The CGPA is rounded off to two decimals. The ranking of the students in a batch at any intermediate or final stage is based on CGPA.

2.8 Revaluation of Answer Papers

When the semester results are published, in case any student feels aggrieved, he/she can request for revaluation of answer scripts of the end semester examination. For this purpose, the student has to submit a request in the prescribed form to the Controller of Examination within five working days from the publication of results through the Department Chair along with the revaluation fee. The answer paper will be shown to the candidate in the presence of the faculty who valued the answer

script and the concerned Department Chair. After going through the answer book and the marks awarded, if the candidate desires revaluation, it will be done by the Chair along with the faculty who valued the answer paper. When the revaluation is completed, the results will be published and the revised grade will be awarded to the student. Revaluation will be allowed only for theory-based courses.

2.9 Award of Degree

In order to be eligible to receive the M.Tech degree, all candidates must complete a Research Paper (based upon the Dissertation Research) which can be submitted to a Scopus-indexed conference/journal.

There are three levels of passing, as outlined below.

(i) In order to earn the **M.Tech Degree with Distinction**, a candidate must:

pass all courses in the first attempt in the normal duration of two years obtaining a CGPA of 8.0 and above;

OR

pass all courses in the first attempt obtaining a CGPA of 8.0 and above completing the program within three years (up to one more year) provided the extension is officially permitted by the PGP Chair to take a break during the programme;

OR

pass all courses in the first attempt obtaining a CGPA of 8.0 and above, and complete the Dissertation Research work before the end of the fifth semester (up to one semester extension) provided the extension is officially permitted by the PGP Chair.

Students who do not meet the above criteria for distinction will be considered for graduation with First Class.

(ii) In order to earn an **M.Tech Degree with First Class**, a candidate must:

pass all courses in the first attempt in the normal duration of two years obtaining a CGPA between 6.50 and 7.99;

OR

pass all courses obtaining a CGPA of 6.50 or above, but taking one semester extra due to failures, etc.;

OR

pass all courses obtaining a CGPA of 6.50 or above, but redoing the Dissertation Research within one extra semester.

(iii) Students who are not covered under Distinction or First Class and who secure a CGPA of 5.0 or above will be awarded the M.Tech Degree without any class or distinction.

3. CODE OF CONDUCT FOR STUDENTS

3.1 Discontinuation of Studies

Based on academic, discipline or other reasons of serious nature, a student may be asked to discontinue from the programme to which he or she was admitted. A student may also, for extraneous reasons, withdraw from the course of study for which he or she is admitted. In all such cases, the student will forfeit the fees paid until the end of academic year concerned but will be issued a Transfer Certificate.

3.2 Authenticity of Documents

During the course of the study in the University, if any information (proof of age, qualification for admission, etc.) furnished by a student is found to be wilfully misrepresented or forged, the student will be dismissed from the University. He or she will forfeit all fees paid up to the end of concerned academic year. The onus of proof for authenticity of all the certificates rests with the student. If such cases are detected after completion of the course, the degree conferred by the University will be withdrawn.

3.3 Malpractice and Plagiarism

Malpractice of any sort in laboratories, assignments and examinations, will be referred to the Disciplinary Action Committee for suitable punishment.

Plagiarism is the practice of taking someone else's ideas or work and calling them one's own without due attribution (acknowledgment or citation). This is also academic malpractice and will be treated by the Disciplinary Action Committee.

When writing their Dissertations and Research Papers, students should never reproduce material verbatim from published conference or journals papers, text books or other sources such as the web documents. It is important to express in one's own words the salient points from related literature rather than copying verbatim what someone else has written.

3.4 Ragging

Students are seriously cautioned that any act of ragging is a criminal offence, which may attract punishment including criminal prosecution and/or dismissal from the University with a mention in the Transfer Certificate to this effect.