MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

ACADEMIC REGULATIONS: 2022 SCHEME

ACADEMIC REGULATIONS

CURRICULUM - 2022

1. ACADEMIC PROGRAMMES

1.1 The institute offers Bachelor of Technology (B. Tech.), Master of Technology (M. Tech.) and Master of Computer Applications (MCA) programmes of MAHE.

1.1.1 Duration of the B. Tech. programme is 8 semesters.

1.1.2 Duration of M. Tech. and MCA programme is 4 semesters.

1.1.3 The maximum duration for a student for complying with the Degree requirement is twice the duration of the academic programme from the date of joining.

2. ADMISSION PROCEDURE

2.1 Undergraduate Programme (B. Tech.):

Eligible students are admitted on the basis of the rank obtained in the All India MAHE Online Entrance Test (MET). Seats are reserved for NRI / Foreign students.

2.2 Post Graduate Programmes (M. Tech. / MCA):

Eligible students are admitted on the basis of the rank obtained in the All India MAHE Online Entrance Test. Seats are reserved for NRI / Foreign students.

3. ELIGIBILITY FOR ADMISSION

3.1 Undergraduate Programme (B. Tech.):

3.1.1 Pass in 10+2 or equivalent with Physics, Mathematics and English as compulsory subjects along with Chemistry /Biotechnology / Biology / any technical vocational subjects as optional; with a minimum of 50% marks taken together in Physics and Mathematics and any one of the optional subjects.

3.1.2 Holders of three years Diploma in Engineering awarded by the Board of Technical Education in Karnataka or equivalent / B.Sc. Degree with Mathematics as one of the subjects; securing an aggregate of at least 50% marks are eligible to join Third semester under lateral entry scheme.

3.1.3 Eligible NRI / Foreign students are admitted based on their qualifying examination performance.

3.2 Post Graduate Programmes:

3.2.1 M. Tech.:

3.2.1.1 BE / B. Tech. in relevant branch with a minimum of 50% aggregate marks in qualifying examination

3.2.1.2 Eligible NRI / Foreign students are admitted based on their qualifying examination performance.

3.2.2 M. Tech. (Part-time):

3.2.2.1 Faculty/Staff sponsored from MAHE only are eligible to do part time M. Tech. programme.

3.2.2.2 Duration of M. Tech. (Part time) programme is 6 semesters.

3.2.3 MCA:

3.2.3.1 A bachelor's degree in Computer Applications / Computer Science / Information Technology with a minimum of 50% aggregate marks in the qualifying examination.

3.2.3.2 Eligible NRI / Foreign students are admitted based on their qualifying examination performance.

4. ACADEMIC PROCESS

4.1 Registration:

4.1.1 Students have to register for the courses with the parent department at the commencement of each semester on the day notified in the academic calendar.

4.2 Pre-registration:

4.2.1 Students need to pre-register for elective courses (both program & open electives) with their department for the next semester as notified in the academic calendar.

4.3 Academic Term:

4.3.1 Semester system of 16-week duration with continuous and comprehensive assessment is followed.

4.3.2 Each semester has a specified course structure.

4.3.3 The first year B. Tech. course structure is common to all the branches of Engineering.

4.3.4 The medium of instruction for all courses offered is English.

4.3.5 Eighth semester of B. Tech. programme, fourth semester of MCA programme as well as third & fourth semesters of M. Tech. programme is fully dedicated to project work.

4.4 Course Numbering:

4.4.1 The courses offered by each Department are coded with 3 letters indicating the department offering the course followed by 4 digits.

4.4.2 First digit indicates the level, second digit indicates semester offered ('1': offered in ODD; '2': offered in EVEN; '0': offered in BOTH) and the last two digits indicate the serial number.

4.4.3 The following codes are used for different departments/programmes:

DEPARTMENT/PROGRAMME	CODE
Aeronautical and Automobile Engineering	AAE
Biomedical Engineering	BME
Biotechnology	BIO
Chemical Engineering	CHE
Civil Engineering	CIE
Computer Science and Engineering	CSE
Data Science & Engineering	DSE
Electronics and Communication Engineering	ECE
Electrical and Electronics Engineering	ELE
Information and Communication Technology	ICT
Instrumentation and Control Engineering	ICE
Mechanical and Industrial Engineering	MIE
Mechatronics	MTE
Physics	PHY
Chemistry	CHM
Mathematics	MAT
Humanities and Management	HUM
Computer Applications	MCA

4.5 Credit Based System:

4.5.1 Each course, theory as well as practical, is expressed in terms of a certain number of credits. The credits are determined by the number of contact hours per week. For theory courses, 1 Hour Lecture / Tutorial per week is assigned 1 Credit, whereas for practical courses 3 contact hours per week is assigned 1 Credit.

4.5.2 Course work in each semester is expressed in terms of a specified number of credits. A student successfully completes a particular semester when he/she earns all the credits of that semester. A student earns full credits for a subject registered if he/she secures letter grade E or higher.

4.5.3 Promotion of a student to higher semesters is based on securing a prescribed minimum number of credits.

4.5.4 It is recommended to incorporate Self Directed Learning (SDL) topics in the courses to train the students for lifelong learning. However, it should not be more than 20% of the syllabus in each course. These topics have to be chosen from available MOOC platforms.

4.6 Assessment:

4.6.1 The academic performance of a student is assessed by the course instructor/s concerned.

4.6.2 The student performance in each theory course is evaluated out of 100 marks, of which 50 marks are for in-semester assessments and 50 marks are for end-semester assessments.

4.6.3 The in-semester assessment in theory courses is based on periodic tests, assignments, quizzes, case presentations, seminars etc. which shall be defined by the course instructor.

4.6.4 The student performance in laboratory courses is also evaluated out of a maximum of 100 marks, and is based on in-semester assessment of 60 marks and examination conducted for 40 marks.

4.6.5 Course Instructors are to give the complete course plan approved by the HoD, at the beginning of the semester. Course plan includes lesson plan & evaluation plan of the course offered.

4.6.6 Course instructors are to give regular feedback on the performance of students.

4.6.7 The performance of a student in a course is reflected in the Letter Grade awarded.

4.7 Attendance Requirements:

4.7.1 All students must attend every lecture, tutorial and practical classes.

4.7.2 A student with less than 75% attendance in individual courses shall not be permitted to write the end semester examination in that course and will be given DT letter grade in the course.

4.7.3 The aggregate percentage of attendance of the student during the semester will be entered in his/her grade sheet of that semester.

4.8 Grading System:

4.8.1 10-point grading system shown is used for awarding letter grade in each course.

Letter Grade	A+	A	B	C	D	E	AP	F/I/DT
Grade Points	10	9	8	7	6	5	0	0

AP: Audit Pass   F: Failure   I: Incomplete   DT: Attendance shortage

4.8.2 The overall performance of a student in each semester is indicated by the Grade Point Average (GPA) which is the weighted average of the grade points obtained in that semester expressed as

$$GPA = \frac{\sum\limits_{i=1}^{n} C_i G_i}{\sum\limits_{i=1}^{n} C_i},$$

where
n = Number of courses graded per semester
C = Course credits
G = Grade points

4.8.3 The overall performance of the student for the entire programme is indicated by the Cumulative Grade Point Average (CGPA) which is the weighted average of the grade points obtained across all semesters till date

$$CGPA = \frac{\sum\limits_{i=1}^{N} C_i G_i}{\sum\limits_{i=1}^{N} C_i},$$

where
N = Total number of courses graded till date

4.8.4 Evaluation of Project Work Dissertation/ Thesis

4.8.4.1 Eighth Semester B. Tech.:

4.8.4.1.1 B. Tech. student shall carry out a Project Work for a minimum of 16-week duration.

4.8.4.1.2 The Project Work can be carried out in the institution / industry / research laboratory or any other institution where facilities exist with approval of the parent Department.

4.8.4.1.3 There will be a mid-semester evaluation of the work done on the project after 8-10 weeks. This evaluation will be done by the department concerned and will be out of 100 marks.

4.8.4.1.4 The final evaluation and viva voce will be conducted after the completion of the project work and submission of the project report, by a panel of examiners including the internal guide.

4.8.4.1.5 In case of external projects, the feedback of the external guide shall be considered during evaluation.

4.8.4.1.6 The end-semester evaluation of the project work is out of 300 marks.

4.8.4.1.7 The grade awarded to the student will be on the basis of the total marks obtained by him / her out of 400 marks.

4.8.4.2 Second year M. Tech. / Fourth Semester MCA:

4.8.4.2.1 A student of M. Tech. shall carry out a Project Work for a minimum of 36 weeks during the second year of the programme, in the institution/ industry/ research laboratory or any other institution where facilities exist with approval of the parent Department.

4.8.4.2.2 There will be a mid-term evaluation of the work after about 18 weeks by the department concerned. This evaluation will be out of 100 marks.

4.8.4.2.3 In the case of the Fourth Semester MCA students, the minimum project duration is 16 weeks and there will be a mid-term evaluation by the department concerned after about 8-10 weeks. This evaluation will be done by the department concerned and will be out of 100 marks

4.8.4.2.4 The final evaluation will be conducted after the completion of the project work and submission of the dissertation by a panel of examiners consisting of an internal guide.

4.8.4.2.5 In case of external projects, the feedback of the external guide shall be considered during evaluation.

4.8.4.2.6 The end-semester evaluation of the project work is out of 300 marks.

4.8.4.2.7 The grade awarded to the student will be on the basis of the total marks obtained by him / her out of 400 marks.

4.9 Class Committee:

4.9.1 A class committee headed by the Associate Director (Academics) is formed for the first year B. Tech. programme. The section coordinators, course coordinators and student representatives of all sections will be members of this committee.

4.9.2 For III to VIII Semester of B. Tech. programme and for every semester of M. Tech. & M.C.A. programme, separate class committees are constituted by the Heads of the respective departments. The committee is formed with a senior faculty of the Department as Chairman & Course Coordinators/Course Instructors of all courses & student representatives as members.

4.9.3 Course Coordinator: If there is more than one section, one of the senior faculty member is nominated by the HOD as Course Coordinator.

4.9.4 Functions of the Class Committee:

4.9.4.1 The class committee will meet thrice in a semester.

4.9.4.2 The first meeting will be held within two weeks from the commencement of the semester in which the course plan, evaluation plan etc. are discussed.

4.9.4.3 The second meeting will be held two weeks after the first test to collect feedback and improve the effectiveness of the teaching learning process. Performance of the students in the tests may also be analyzed.

4.9.4.4 The Chairman of the class committee should send the minutes of the class committee meeting to the Associate Director (Academics) through the Head of the Department after each class committee meeting.

4.9.4.5 The third meeting is to be held to analyse the performance of the students in all courses of study and grade finalization. However, the student representatives are exempted from this meeting.

4.9.4.6 The Associate Director (Academics) will declare the results after processing.

4.10 Section Committee:

4.10.1 Each section of the first year will have a Section Committee, consisting of the Section Coordinator, faculty members handling both theory and practical classes for that section and student representatives as members.

4.10.2 The Section Coordinator will be a senior faculty member who teaches at least one subject for that section. The Section Coordinators will be nominated by the Associate Director (Academics), who will administer the functioning of all the Section Committees.

4.10.3 The section committee will meet periodically to review the overall effectiveness in the conduct of first year classes.

4.11 Faculty Advisors:

4.11.1 To help the students in planning their courses of study and for general advice regarding academic programmes the Head of the Department will assign one to two senior faculty members in the III semester who will be Faculty Advisors for the batch.

4.11.2 Faculty Advisor for a particular batch will continue till the regular students complete the programme.

4.12 Promotion to Higher Semesters:

4.12.1 B. Tech. Programme:

4.12.1.1 Promotion of a student from an even semester to the next higher (odd) semester is subject to securing the minimum academic performance specified.

4.12.1.2 To be eligible for promotion to the third semester, a student should have earned a minimum of 26 credits at the end of the second semester.

4.12.1.3 To be eligible for promotion to the fifth semester, a student should have earned a minimum of 68 credits at the end of the fourth semester.

4.12.1.4 To be eligible for promotion to seventh semester, a student should have earned a minimum of 110 credits at the end of the sixth semester.

4.12.2 M. Tech. Courses:

4.12.2.1 A student can start the project work at the beginning of the third semester only if she/he has acquired 40 credits at the end of the second semester, and he/she has to earn all the credits of the first and second semesters, before he /she is permitted to submit the project thesis

4.12.2.2 A part-time M. Tech student can start the project work at the beginning of the third year, but he/she has to earn all the credits of course work, before he/she is permitted to submit the project thesis

4.12.3 M.C.A. Course:

4.12.3.1 Promotion of a student from second semester to third semester is subject to securing a minimum of 30 credits at the end of the second semester.

4.13 Academic Probation and Termination of the registration to the programme:

4.13.1 A student who is not eligible for promotion from an even semester to the next higher semester for reasons of not having earned the prescribed minimum number of credits will be required to discontinue the academic programme temporarily. In such case he/she will be put on academic probation for the next academic year and a warning letter shall be issued.

4.13.2 If a student is repeating a semester/s due to poor academic performance, he/she will also be put on academic probation.

4.13.3 The student put on academic probation shall be periodically monitored and mentored by the faculty advisor. He/she can rejoin the academic programme after fulfilling the academic requirements as in 4.12 at the end of the academic probation.

4.13.4 At the end of the academic probation year, if a student fails to acquire the minimum credits to get promoted to next higher semester, his/her registration for the academic programme shall be terminated.

4.14 Re-joining a Programme:

A student who discontinues the academic programme for any reason and re-joins the programme at a later date shall be governed by the rules, regulations, courses of study and syllabi in force at the time of his/her re-joining the programme.

4.15 End-Semester Examination:

4.15.1 The end semester examination will be conducted only in the courses offered in the current semester.

4.15.2 A student should have appeared for the end-semester examination of the prescribed course of study to be eligible for the award of a passing grade in the course.

4.15.3 Only students with attendance 75 % will be permitted to appear for the end semester examination.

4.15.4 A separate minimum of 35% of marks in the end semester examination is essential for awarding a passing grade in a theory course.

4.15.5 For M Tech and MCA programmes, a minimum of 40% of marks in the end semester examination is essential for awarding a passing grade in a theory course.

4.15.6 A student who earns a minimum of 5 grade points (E grade) in a course is declared to have successfully completed the course, and earned the credits assigned to that course.

4.15.7 A course successfully completed cannot be repeated for grade improvement. However, in special cases students may be allowed to reject and repeat the entire semester with the consent of HoD/ Associate Director (Academics).

4.15.8 If a student is eligible for but fails to appear in the end semester examination due to valid reasons, he/she will be awarded an 'I' grade (incomplete) on the grade sheet. However, it needs approval of Associate Director (Academics).

4.16 Make-up examinations:

4.16.1 Make-up examinations will be held at the end of the semester break to help the students who have got F/I grade in the courses offered during the semester.

4.16.2 The cut-off marks for grades in the make-up examination will be same as those in the regular end-semester examination.

4.16.3 However, for students who have once failed (F grade) in any course, a maximum of C grade only will be awarded in subsequent examinations irrespective of their performance.

4.16.4 Those who miss regular examinations due to valid reasons (I grade) will be allowed to retain whatever grade they secure in make-up examinations.

4.17 Re-valuation of answer papers:

4.17.1 A Student may apply for the revaluation of end-semester examination answer scripts by submitting an application along with the specified fee.

4.17.2 Those who apply for revaluation will be able to see their answer scripts along with scheme of evaluation on a specified date and venue.

4.17.3 Students will be awarded with the grade they are eligible for after revaluation, as per the cut-off.

4.17.4 The fee will be refunded in case of any increase in grade after revaluation.

4.18 Re-registration of courses:

4.18.1 Students with F/I/DT Grade are allowed to re-register for subjects of lower semester along with their regular term subjects by paying the prescribed fees.

4.18.2 Students may not be permitted to re-register in courses if there are clashes in the time table.

4.18.3 Students are allowed to register for a maximum of 36 credits in a given semester.

4.18.4 Students are eligible to get actual grades in re-registered courses.

4.19 Withholding of Results:

Results will be withheld when a student has not paid his/her dues or there is a case of disciplinary action pending against him/her.

4.20 Eligibility for the Award of Degree:

4.20.1 A student will be eligible for the award of the degree if:

4.20.1.1 He/she earns the required number of credits specified for all semesters.

4.20.1.2 He/she has paid all dues to the Institute.

4.20.1.3 No case of disciplinary action is pending against him/her.

4.20.2 Total number of credits required for obtaining:

4.20.2.1 B. Tech. - 160*

* Credit used for CGPA computation: 148. The courses such as Universal Human Values and Professional ethics, Human Rights and Constitution, Open electives and industrial training are excluded from GPA/CGPA computation.

4.20.2.2 M. Tech. - 75

4.20.2.3 MCA - 80

4.20.3 Minimum CGPA for Graduation is 5.0 and the Maximum that can be earned is 10.

4.20.4 However, in the credits system class/rank is not awarded

4.21 Audit Courses:

4.21.1 Students have the option of Auditing additional courses with the consent of the course instructor.

4.21.2 On successful completion, the student will be given 'AP' letter grade.

4.21.3 The grade obtained in an audit course will not be used for computation of CGPA.

4.22 Minor Specialization:

4.22.1 Students have the choice of getting a minor specialization along with their degrees by earning 20 credits. in the prescribed set of subjects offered as electives.

4.22.2 The students have to earn 12 credits from the prescribed set of four electives (two courses each in sixth and seventh semesters respectively) under a particular stream of minor specialization.

4.22.3 Students opted for minor specialization have to take up a mini project work in the area of the specialization and successful completion of the same would earn them 8 credits. Therefore, the students opting for minor specialization have to earn 168 credits for obtaining B Tech degree.

4.22.4 The students who do not opt for minor specialization would study four elective courses (two courses each in sixth and seventh semesters respectively) and earn 12 credits after successful completion of them.

4.22.5 Minor specialization shall be mentioned in the VIII semester marks card / Transcript along with CGPA.

5. CREDITS FOR NSC AND STUDENT MAJOR PROJECT

5.1 Credits for NCC:

Three credits against one of the Open Electives for 1-year of active participation. The certificate from the unit head shall be mandatory for the award of credits.

5.2 Student Major project:

5.2.1 Six months of active involvement in any of the institute-approved student major projects shall be considered in lieu of one credit industrial training requirement.

5.2.2 One year of active involvement in any of the institute-approved student major projects shall be considered in lieu of one of the open electives (3 credits) requirement.

5.2.3 The certificate from the faculty coordinator shall be mandated for the award of the credits.

6. CHANGE OF BRANCH

6.1 Change of branch is allowed on request against vacancies before commencement of the third semester based on academic performance of the student in first year B. Tech.

6.2 Applications for change of branch shall be submitted to the Associate Director (Academics), at the end of the second semester.

6.3 Merit list will be prepared based on the CGPA after the declaration of second semester results.

6.4 Only students who have passed in all the subjects of I & II semesters are eligible for change of branch.

6.5 Students who have secured seats under any scholarship scheme and have opted for branch change will not be eligible for the scholarship from the second year.

6.6 Mutual change of branch is not permitted.

7. TRANSFER OF CREDITS

The courses credited elsewhere, in Indian/Foreign University/Institutions/Colleges/certified MOOC by students during their study period at MIT Manipal may count towards the credit requirements for the award of degree. The credit transferred will reduce the number of courses to be registered by the student at MIT. The guidelines of such transfer of credits are as follows:

7.1 Under Graduate and Post Graduate students with consistent academic performance and GPA/CGPA ≥ 7 can credit the courses which are approved by Board of Studies (BOS), MAHE during fifth, sixth and seventh semester of UG and second semester or second year of PG at Partner Universities.

7.2 Students are required to identify the subjects from Partner University to be mapped to MIT courses and the department will scrutinize and approve the subjects for credit transfer.

7.3 Credit transferred are not used for GPA/CGPA computation, however, credit transferred are considered for the overall credit requirements of the program.

7.4 Following this, a learning agreement will be prepared and approved for the subjects to be considered for credit requirement and transfer for the exchange semester with acceptance from both universities.

8. B. Tech. HONOURS

8.1 Any student with CGPA ≥ 8.5 at the end of IV semester can opt for B. Tech (Honours)

8.2 A student shall be allowed to secure the required coursework credits (up to 12 credits) either by taking up the courses at M Tech level identified by the departments or through the MOOC courses based on SWAYAM/NPTEL/COURSERA platforms offered by the departments. (one each in V, VI and VII Semester B Tech)

8.3 The Departments may identify the relevant MOOC courses (4 credits each) and get them approved by the respective Board of Studies (BoS) and ratified by the Academic Council of MAHE.

8.4 Institute will be constituting an advisory committee to monitor the progress of the B Tech (Honours) program. With the approval of the above committee, students are allowed to take up Eighth-semester practice school along with their ongoing B Tech (Honours) project.

8.5 All the students opting for B Tech (Honours) have to complete a mandatory 2 credits audit course on Research Methodology and it will be reflected in their Fifth-semester grade sheet as an audit pass (AP). The above course may be offered using available MOOC platforms such as SWAYAM/NPTEL/COURSERA. The syllabus for the above course proposed shall be approved by the respective Board of Studies (BoS) and ratified by the Academic Council of MAHE.

8.6 Student should take up a project work related to the domain resulting in at least ONE Scopus indexed publication from the work, as first author and earn 20 credits (12 as a part of 160 credits for B Tech degree + 8 as a part of 20 credits for B. Tech. Honours)

8.7 Total number of credits to be earned by the student for B Tech honours degree will be 160 + 20 = 180.

8.8 Student should maintain a minimum CGPA of 8.5 at the end of the program.

9. B. Sc. APPLIED SCIENCE (ENGINEERING)

9.1 A student who has completed the maximum period of study (eight years) and not successful in getting the required number of credits to award B Tech degree will be considered for awarding B. Sc. Applied Science degree in the discipline of their Engineering programme.

9.2 The minimum number of credits to be earned by the student for awarding this degree is 130.

10. TERMINATION FROM THE PROGRAMME

A student shall be required to leave the institute without the award of B Tech degree, under the following circumstances.

10.1 If a student fails to earn minimum number of credits required for promotion to the next semester at the end of an academic probation year.

10.2 If a student fails to acquire the requirements for the completion of the degree within the maximum permissible period.

10.3 If a student is absent for more than 6 weeks at a stretch in a semester without sanctioned leave.

10.4 Based on disciplinary action, on recommendation of an appropriate committee and approved by the vice chancellor