



Ordinance NO. 48 OF 2017

Examinations leading to the Degree of Master of Technology(Two Years Post Graduate Program with Semester Pattern and Credit Grade System) in the Faculty of Engineering and Technology Ordinance , 2017.

Whereas , it is expedient to provide an Ordinance in respect of Examinations Leading to the Degree of Master of Technology (Two Years Post-Graduate Program with semester pattern and credit Grade system) in the faculty of Engineering and Technology for the purposes hereinafter appearing, the Management council is hereby pleased to make the following Ordinance:-

- 1 This Ordinance shall be called “ **Examinations leading to the Degree of Master of Technology (Two Years Post Graduate Program with Semester Pattern and Credit Grade System) in the Faculty of Engineering and Technology, Ordinance 2017.**
- 2 This Ordinance shall come into force with effect from date of its making by the Management council.
- 3 The M. Tech. Programs governed by this Ordinance & the corresponding Board of Studies shall be as detailed in the **Table 1** given below,

Table 1: M Tech Programs with Specializations

Sr No	Specializations offered	Board of Studies Comprised of	Appendix
1	CAD/CAM	Mechanical Engineering	A
2	Computer Science and Engineering	Computer Technology/Computer Science and Engineering	B
3	Energy Management Systems	Electrical Engineering	C
4	Heat Power Engineering	Mechanical Engineering	D
5	Structural Engineering and Construction	Civil Engineering	E
6	Electrical Power System	Electrical Engineering	F
7	Electronics & Communication Engineering	Electronics Engineering	G

- 4 The duration of the course shall be of two academic years consisting of four semesters for which the teaching sessions shall be held during regular college hours and the end semester examination shall be conducted at the end of each semester namely, the first, second, third and fourth semester at such places and on such dates as may be decided by the university.
- 5 The period of Academic Session shall be such as may be notified by the University.
- 6 The written End Semester Examination (ESE) of first and third semester shall be held by the Affiliating University in winter & supplementary examination in summer every

year. Further the second and fourth semester ESE will be held in summer & the supplementary examination in winter every year.

7 Subject to the compliance with the provisions of this ordinance, and other relevant ordinances & directions issued by AICTE and resolution by the state of Maharashtra in force from time to time, the following persons shall be eligible for admission to the, examinations, namely

a) M. Tech. (First Semester)

i) The college shall get the list of admitted students scrutinized and approved from the university, strictly as per sanctioned quota and in accordance with the prescribed rules and regulations.

ii) Subject to the conditions prescribed for admission to the First Semester M. Tech., the candidate shall be considered eligible if he/she possesses a Bachelors degree or equivalent in the relevant field of engineering with percentage of marks as specified by the apex council, AICTE, New Delhi from time to time.

iii) The discipline wise eligibility for admission to the respective post graduate program shall be as mentioned in **Table 2** given below.

iv) The candidate should have perceded a regular course of study in a college affiliated to the University conducting of the course or a university department/center for not less than one semester in the subject in which he/she offers for examination.

Table 2: Eligibility Criteria for Admission to M Tech Courses

Sr No	M Tech Specializations	Eligibility Qualification B.E./ B.Tech. of the Affiliating University or any other Statutory University recognized equivalent thereto OR AMIE in following Disciplines of Engineering and Technology
1	CAD/CAM	Mechanical/ Production/ Industrial Engineering/ Automobile Engineering
2	Computer Science and Engineering	CT/CS/CE/EDT/Electronics/EXTC/Electrical/ E & P/PE/IT/MCA with 60% marks
3	Energy Management Systems	Electrical/ Mechanical/ Power Engineering / Electronics/ Production/ Computer/ Instrumentation/ Industrial Electronics / Power Electronics
4	Heat Power Engineering	Mechanical / Automobile / Power Engineering/Production Engineering
5	Structural Engineering & Construction	B.E./B.Tech. in Civil Engineering/Structural Engineering/Construction Technology.
6	Electrical Power System	B.E./B.Tech. in Electrical Engineering / Electronics & Power/ Electrical & Electrical Engineering / Power Engineering/ Power Electronics Engineering/Electrical Engineering(E&P)
7	Electronics & Communication Engineering	B.E./B.Tech. Electronics Engineering or Electronics & Telecommunication Engineering or Electronics & Communication Engineering

v) M.Tech. (Second Semester) - A student who has after passing the M.Tech. (First Semester) examination, prosecuted a regular course of study in a college affiliated to the university conducting the course or a university department/ center for not less than one semester in the subject in which he/she offers for examination.

- vi) M.Tech. (Third Semester) - A student who has after passing the M.Tech. (Second Semester) examination, prosecuted a regular course of study in a college affiliated to the university conducting the course or a university department / center for not less than one semester in the subject in which he/she offers for examination.
- vii) M.Tech. (Fourth Semester) - A student who has after passing the M.Tech. (Third Semester) examination, prosecuted a regular course of study in a college affiliated to the university conducting the course or a university department/ center for not less than one semester in the subject in which he/she offers for examination.
- 8 The scope of the subject shall be as indicated in the syllabus.
- 9 The fees for each of the examination shall be such as may be prescribed by the Affiliating University from time to time.
- 10 The number of Theory and Laboratory Courses, Internal Assessment, Dissertation and Pre-submission seminar, Viva-Voce if any, maximum marks assigned to each of them, and the minimum marks an examinee must obtain in order to pass the examination shall be as indicated in the respective scheme of Examination appended with this Ordinance. as Appendices – A,B,C,D,E,F and G
- 11 The internal and external assessment of student performance incorporates a suitable evaluation scheme based on their performance in different methodological tests/examinations as mentioned below:

For Theory Courses:- continuous assessment shall have various components of evaluation as given below:

- a) **Mid Semester Examination (MSE)** will be carrying 10% weightage and shall be conducted independently by each of the college. The weightage for MSE in each subject shall be a maximum of 10 (ten) marks only. Usually one or two such MSEs should be conducted for the given theory course.
- b) **Internal Evaluation (IE)** will be carrying 20% weightage and shall be monitored based on following parameters. The weightage for IE in each subject shall be limited to maximum of 20 (twenty) marks only. It is broken further as given below.
- | | |
|----------------------------|----------|
| Response in classes (CR) - | 05 marks |
| Attendance - | 05 marks |
| Assignments/Tutorials - | 10 marks |
- These two components i.e. MSE and IE put together will form the internal assessment component carrying a weightage subject to a maximum of 30 (thirty) marks only.
- c) **End Semester Examination (ESE)** carrying 70% weightage shall be conducted for each of the theory course/subject by the institute through Affiliating University, as per its Ordinance subject to maximum marks as specified in the designed curriculum.

Pattern of End Semester Examination (Theory Course) –

- i) The ESE shall be conducted by the Affiliating University, as per the schedule notified by the Board of Examinations.
- ii) The duration of the said written examination will be of *THREE HOURS*.
- iii) The ESE shall comprise of *EIGHT* questions based on entire prescribed syllabus of the given theory course, out of which an Examinee shall be required to answer *ANY FIVE* questions.
- iv) All the Questions shall carry an equal weightage of 14 marks.

- v) The questions will be either long answer type or short answer type containing number of sub questions.

For Laboratory Courses : continuous assessment shall have various components of evaluation as given below:

- a) **Term Work (TW)** Internal assessment carrying 50% weightage shall comprise of number of experiments/practicals to be performed by each of the student as per the prescribed syllabus of the given course and a written test/viva voce. The weightage for TW for each of the laboratory course shall be of 50 (Fifty) marks only and are distributed as follows:-

Performance of experiments and journal submission –	20 marks
One Written test on practical topics/viva voce -	20 marks
Attendance (Theory and practical both) -	10 marks

The final certification and acceptance of the term work ensures the satisfactory performance in the given laboratory course and minimum passing in the term work.

- b) **Performance and Oral Examination (POE)** - External laboratory examination will be assessed based on POE carrying 50% weightage. Herein every examinee has to perform one experiment/practical. This experiment/practical shall be only from the aforesaid list, which the examinee is deemed to have performed during his/her term work. Wherein the performance of experiment is not possible, a written examination shall be conducted. The oral questions i.e. viva-voce shall also be from the related topics. The weightage for POE in each subject shall be limited to a maximum of 50 (Fifty) marks only and the break-up shall be as follows.

Performance of experiment/written test:	30 marks
Oral examination/Viva-voce:	20 marks

- 12 i) The subject of the Dissertation Study shall be communicated to the candidate by the head of the institution/Department at the beginning of the Third Semester on approval of the Research and Recognition Committee of the concerned Board of Studies.

ii) An examinee shall carry out his dissertation work beginning from third semester up to the end of fourth semester under the supervision of:

- a) a recognized Post-Graduate Teacher of the college or institute.

OR

- b) a person from industry or research institute possessing B.E. degree in the appropriate subject and has not less than 5 years of experience in the industry or research institution in the suitable capacity.

iii) The examinee shall submit his dissertation study to the university through the Head of the institute or college not later than 31st July / 31st /December, duly certified by the supervisor.

- iv) The Defense Examination of the dissertation study shall be conducted by the Board of examiners consisting of an external examiner appointed by the university and internal examiner. The external examiner shall not be associated with the examination of more than two examinees simultaneously.

- v) One copy of the dissertation study shall be sent to the external examiner by the

college as early as possible, but not less than ten days before the Defense Examination.
vi) An examinee of the fourth semester examination, who fails to submit his thesis within the prescribed date or fails to present oneself for the defense may, subject to other provisions of this Ordinance shall be readmitted to the examination at any subsequent date provided:

- a) He/She pays the fee prescribed from time to time.
- b) His/her application is received by the Controller of Examinations not later than one month before the date of commencement of the examination.
- c) He/She submits his thesis on the same subject two weeks prior to the examination date.

13 The A.T.K.T. rules shall be as under for admission to the respective next higher semesters of the program with Theory and Laboratory courses considered as separate heads of passing

Table 3: ATKT Rules as applicable to M. Tech Program

Name of the Examination M. Tech.	Candidate should have passed in all the subjects/courses of the following examination	Candidate should have passed in all heads of following examinations of the university	Candidate should have passed in all heads except in TWO passing heads of the following examinations taken together
I Semester	BE/B Tech or equivalent	-----	-----
II Semester	-----	-----	I Semester
III Semester	-----	I Semester	II Semester
IV Semester	-----	II Semester	III Semester

Provided,

(a) that an examinee who has secured pass grade in any course/subject (theory or laboratory) or courses/subjects shall, at his option, be exempted from appearing in that course/subject at the subsequent examination.

Examination means the 'Theory Course' and the 'Laboratory Course' with their respective institutional evaluation/assessment being considered as separate heads of passing (though of the same course/subject), an examinee passing under any one of these, but failing in another, shall at his option, be entitled to get 'Exemption' in that part of the course/subject (either theory or laboratory), in which he has secured the pass grade.

14 The fees for the examination shall be as prescribed by the University from time to time and whenever any change is made in the fees prescribed for any particular examination that shall be notified through a notification for information to the examinees concerned.

15 As per the adopted Model Credit Grade System (CGS), the computation of Semester Grade Point Score (SGPS) and Cumulative Grade Point Score (CGPS) of an examinee shall follow the steps as given below:

The marks will be given in all examinations which will include internal college assessment and university assessment marks. The total marks thus obtained for each Theory / Laboratory course shall be converted into Grades as per **Table 4**.

SGPS shall be calculated based on Grade Points corresponding to Grade as given in **Table 4** and the Credits allotted to respective Theory / Laboratory shall be as shown in the program scheme for respective semester.

$$SGPS = \frac{(C_I \times GP_I + C_{II} \times GP_{II} + \text{---} + C_n \times GP_n)}{C_I + C_{II} + \text{---} + C_n}$$

Where, $C_{1...n}$ – No of Credits of individual course

$GP_{1...n}$ – Grade Points obtained in the respective course.

Cumulative Grade Point Score (CGPS) is indicative of the overall academic performance of a student in the given program, Bachelor of Engineering (B.E.). It shall be computed as cumulative total of the products of actual grade point scored and its weightage in terms credits of I, II, III and IV semester divided by total number of credits of I, II, III and IV semester.

$$CGPS = \frac{(SGPS_I \times C_I + SGPS_{II} \times C_{II} + SGPS_{III} \times C_{III} + SGPS_{IV} \times C_{IV})}{(C_I + C_{II} + C_{III} + C_{IV})}$$

Where, $SGPS_{I \text{ to } IV}$ – Corresponding grade point scores obtained in I,II,III & IV Semester

$C_{I \text{ to } IV}$ – Total no of Credits of I,II,III & IV Semester

16 (i) The theory and laboratory courses in which an examinee is to be examined, the maximum grade for these and the minimum grade which an examinee must obtain in order to secure exemption in the aforesaid course(s) and the examination are detailed in table 4.

Table 4: Conversion of Marks to Grades in Credit System (For Theory & Laboratory Courses)

Percentage score, X	Grade	Grade Points
$85 \leq X \leq 100$	A ⁺	10
$75 \leq X < 85$	A	9
$70 \leq X < 75$	B ⁺	8
$65 \leq X < 70$	B	7
$60 \leq X < 65$	C ⁺	6
$55 \leq X < 60$	C	5
$50 \leq X < 55$	D	4
$00 \leq X < 50$	F	0
Absent in Examination	Z	---

(ii) The minimum grade required to be secured for passing at the I/II/III/IV semester examinations shall be ‘D’ indicating a percentage score of more than or equal to 50 and less than 55 for the theory and laboratory courses.

(iii) The internal and external component of evaluation for a given theory/laboratory course are not considered as separate passing heads instead they together form a single passing head i.e. the qualifying marks to be secured by a student in the given course either theory or laboratory are sum of internal and external components of its evaluation.

17 The medium of instruction and examinations shall be ‘English’.

18 Provisions of Ordinance to provide grace marks for passing in a particular head and improvement of Division (Higher Class) and getting Distinction in the given course/subject and Condonation of Deficiency of Marks in a course in the faculty of engineering and technology shall apply to each examination under this Ordinance.

19 An examinee who does not pass, or who fails to present himself/herself for the examination shall be eligible for ‘Readmission’ to the same examination, on payment of a fresh fee and such other fees as may be prescribed from time to time.

20 An unsuccessful examinee, at any of the above examination, shall have an option to carry his/her internal assessment/term work marks for theory/laboratory examination to his/her successive attempt at the examination. The examinee, however can forego his/her internal assessment/term work marks in a subject or subjects, in which case he/she shall be examined for a total of marks comprising the ESE/POE examination and MSE & IE/TW together to form the ‘Grade’, at his/her successive attempts at the examination. Such an option may be availed by the examinee by indicating the same in his/her “Application Form for Examination” and the option once exercised, it shall be “Final and Binding” on the concerned examinee.

21 As soon as possible after the examinations, the Board of Examinations shall publish a list of successful examinees. The result of all examinations shall be classified on the basis of Semester Grade Point Score ‘SGPS’ evaluated as specified in the adopted model Credit-Grade System and shall be notified in accordance with the provisions specified in the concerned Ordinance.

22 Notwithstanding anything to the contrary in this Ordinance, no one shall be admitted to an examination under this Ordinance, if he/she has already passed the same examination or an equivalent examination hitherto of any Statutory University.

23 (i) The examinees who have secured pass grade in all the ‘Subjects’ prescribed for all the “Examinations” shall be eligible for the award of the Post Graduate Degree of Master of Technology in the respective specialization and branch of engineering in the prescribed form.

(ii) The classification of ‘Grade’ of Examinees for the award of the Post Graduate Degree of Master of Technology shall be on the basis of CGPS Interval as shown in the Table wherein Cumulative Grade Point Score ‘CGPS’ shall be evaluated by accounting **SGPS of I, II, III and IV Semester.**

(iii) The Degree, in the prescribed form shall be signed by the Vice-Chancellor.

(Statement of object and reasons)

The Vice-Chancellor of the University had issued Direction No 149 of 2012 on 31/08/20112 in respect of Examination Leading to the Degree of Master of Technology (Two Years post-Graduate program with semester pattern and credit grade system) in the faculty of Engineering and technology from the year 2012-13 under provision of section 14 (8) of the Maharashtra University Act, 1994

This Direction was amendment by direction No.190 of 2016 and 200 of 2016

The subject matter of the Direction is required to be regulated by an Ordinance as provided Under the Act.

Inview of the above , the existing Direction alongwith amending Direction are required to be covered into an Ordinance as provided under that Act , hence this Draft Ordinance is prepared for consideration of the Academic council and the Management council.