Dr B R AMBEDKAR NATIONAL INSTITUTE OF TECHNOLOGY JALANDHAR

M Tech Regulations
for
Admission Year 2012 Onwards

Approved in 20th Senate Meeting – May 2012

Modified Clause 1.2 and 1.3 as per 20th Senate Decision

As the Institute is now participating in Centralized Counseling for M Tech Programmes jointly conducted for various NIT's , so clause 1.2 and 1.3 for "Eligibility criterior M Tech Programmes will apply only to left out seats after centralized counseling for M Tech Programmes (CCMT)

Dr B R Ambedkar National Institute of Technology, Jalandhar

Academic System

Regulations for Full-Time M.Tech Programme

(1) Eligibility Criteria for Admission

1.1   Candidates who have been awarded Bachelor's Degree in Engineering/Technology from a recognized university with a valid GATE score or Master's Degree in appropriate branch of Sciences with a first class or minimum 60% marks (CGPA 6.5) or equivalent and a valid GATE score or UGC/CSIR fellowship are eligible to apply for admission to M.Tech programme of the institute. However, if the seats remain vacant after admitting GATE qualified candidates, candidates without GATE score may be considered for the purpose of admission. However, such candidates will have to qualify the entrance test conducted by the institute.

1.2   Candidates sponsored by UGC/AICTE approved technical institutes having same academic qualifications as required at serial no.1.1 and preferably two-years experience of full time job are eligible to apply for M.Tech programme. A valid GATE score or UGC/CSIR fellowship is not required. However, such candidates will have to qualify the entrance test conducted by the institute.

1.3   Candidates sponsored by industries/R&D organizations/national laboratories having academic qualifications as in 1.1 with preferably two years of experience are eligible to apply for the M.Tech programme. However, a valid GATE score or UGC/CSIR fellowship is not required. However, such candidates will have to qualify the entrance test conducted by the institute.

1.4   For a foreign national candidate who applies through Ministry of Human Resource Development, Govt. of India, or Indian Council of Cultural Relation, Govt. of India, are eligible to apply provided that they possess the same minimum academic qualifications as given in 1.1.

1.5   All in-service candidates must have to submit No Objection Certificate of their employers.

(2) Admission

2.1   Applications on prescribed format will be invited once in a year through advertisement in the national dailies media and on institute's website.

2.2. The Board of Governors of the Institute on the recommendations   of the Institute Senate will decide on the number of seats for various Departments/Centres/Specializations. The reservations of seats for SC/ST candidates will be as per the Govt. of India norms provided the SC/ST candidates have valid GATE score and satisfy other Senate requirements.

2.3 The BOAC will decide on the operational aspects including selection of candidates, the academic calendar and other regular activities regarding the conduct of the programme. If there are any vacancies after the admission date is over, the filling of such vacancies will be decided by the Chairman of the Senate.

2.4 Regarding all matters concerning selection of candidates, the decision of the Senate Chairman or his nominee, viz; Chairman, BOAC will be final.

2.5 The selected candidates should satisfy all other admission requirements   stipulated in the letter of offer of admission and only then they will be admitted to M.Tech programme after payment of the prescribed fee and other charges. If at any subsequent time, it is found that the candidates do not fulfill any of the stipulated requirements, the Chairman, BOAC may revoke his/her admission to the programme, with the approval of the Director.

(3) Programme Structure

3.1 Each stream of M.Tech programme will have the following components:
- i) Core courses (theory), practical and seminar/independent study
- ii) Elective courses
- iii) Dissertation work

In addition, the M.Tech students may be required to give one or more seminars and undergo industrial/practical training as per the requirements of the programme.

3.2 Each regular M.Tech programme will be completed in four semesters. During each M.Tech semester, the student will register for course work and/or dissertation work as specified by the institute Senate for each programme. The curriculum for different courses should be drawn up so that minimum number of credits for successful completion of any M.Tech programme is not less than 60.

3.3 Each M.Tech student will be required to register for all the core courses specified in the curriculum of his programme of studies and he/she will have to successfully complete all the core courses.

3.4 Each M.Tech student will have to register for elective courses offered by the department in that particular semester from the list of courses approved by the institute senate.   However, a student may be permitted selection of electives other than those listed by the departments provided these have relevance to the area of specialization.

3.5 In certain specialized M.Tech programmes, a student may be permitted to register for a maximum of two B Tech courses. Such courses will be identified by the concerned department with a prior approval of the institute Senate.

3.6 Each course will be assigned credits as follows;
- i) One credit for each lecture period.
- ii) One credit for each tutorial period.
- iii) One credit for each laboratory session of two or three hours.
- iv) Credits for seminars, industrial/practical training will be as per the curriculum approved by the institute senate.

(4) Registration

4.1 Every student will enroll and register for the courses he/she intends to undergo during the first semester of M.Tech programme on a pre-specified date notified for the purpose.

4.2 In case of subsequent semesters, the registration for the courses will be done on a specified date/dates before the end semester examination of the previous semester. In this connection, there may be proper registration card, which will contain details of the core and elective courses, seminars, and dissertation work to be taken up in the semester along with the number of credits for each course/seminar/project work.

4.3 During the 4th semester, students will normally be registered only for the dissertation work and not for theory courses. In case a student is short of a few credits required for the M.Tech degree, he/she may be permitted by the Chairman, BOAC to register for one or two courses along with project under the clear recommendations from the concerned head of the department. However, the teaching assistantship wherever applicable will be paid only for a maximum duration of four semesters.

4.4 Late registration will be allowed with a late fee of Rs.500/- up to one week beyond the last date specified for the registration. However under special circumstances, the period may be relaxed by the Dean, Academic Programmes.

4.5 From 2nd semester onwards, all M.Tech students are required to enroll on a specified date at the beginning of a semester. A student will become eligible for enrollment only if, in addition to satisfying all the academic requirements, he/she has cleared all dues to the institute, hostel, library, etc., up to the end of the previous semesters and he/she has not been debarred from enrollment by the institute discipline committee. At the time of enrollment, a student can drop a course for which he/she was registered earlier and opt for another course with the consent of all faculty advisors and on valid grounds.

4.6 Withdrawal from course, in which a student is earlier registered, is permissible up to two weeks from the date of commencement of the semester. However, its substitution by another course is not permitted. The number of courses after withdrawal should enable the student to earn the necessary credits to continue his/her studies.

4.7 In case the withdrawal has been from the list of core courses, the student will have to register for these courses when offered next.

4.8 A student may be allowed by Chairman, BOAC to withdraw from a semester completely under extra-ordinary circumstances (e.g. medical grounds). However, withdrawal from a semester will be allowed only for a maximum continuous period of two semesters.

(5) Faculty Adviser

To render general advice to the students in connection with the academic programmes and to help them in planning the courses of study, the admitting department/centre will assign a group of students to a faculty member, to be called the faculty adviser, of the department/ centre.

(6) Maximum Duration of the Programme

6.1 Minimum duration of the M.Tech programme for regular candidates shall be four semesters.

6.2 The students who do not complete their dissertation work up upto the end of 4th semester and are permitted to submit the report on the subsequent date; next date of successful completion of the dissertation work will be mentioned in the grade card.

6.3 An M.Tech student will be allowed to submit the dissertation regarding the project work, only if he has appeared in all the theory papers of the programme. The result of the dissertation shall be declared after the candidate has passed all the theory papers and the seminars etc.

6.4 In case the dissertation is rejected or the candidate is unable to complete the dissertation by the end of the 4th semester, he/she will be allowed to submit the same within three years from the date of admission in case of full-time candidates. Further extension beyond three years for full-time programme and beyond five years for part-time programme, but not exceeding six months, may be allowed by the Chairman, BOAC on the recommendations of the concerned project guide and head of the concerned department.

(7) Minimum requirement to continue the programme

7.1 A full time M.Tech student should earn minimum 12 successful credits in the first semester and 28 successful credits at the end of 2nd semester. In case an M.Tech student does not satisfy these requirements, he/she will have to leave the programme.

7.2 For continuation in the programme, an M.Tech student should have a minimum CGPA of 5.0. While calculating the CGPA for eligibility to continue in the programme, only courses successfully completed up to the point under consideration by the concerned student will be taken into account. If the CGPA of any student, calculated in this manner, falls below 5.0, the student will be issued a warning and in case he/she again obtain a CGPA less than 5.0 in the following semester, then he/she will be disqualified of the programme.

(8) Attendance Requirements

8.1 The institute desires 100% attendance with a provision for consideration for absence on account of late registration, sickness or other such contingencies. The attendance requirements of 75% of the scheduled classes in course are needed for appearing in the examination.

8.2 A student with less than 75% attendance in a course during a semester will be awarded 'W' grade in that course irrespective of his/her performance in the tests. The course coordinator, while awarding the grades, will take into account the consolidated attendance record for the whole semester.

8.3 In order to maintain the attendance record of a particular course, a roll call will be taken in every scheduled lecture.

8.4 The course coordinator will consolidate the attendance record for the course form the beginning of the semester up to class test - I and class test - II and also up to the end of the semester. The teacher offering the course shall notify the students having less than 75% attendance with an intimation of the same to the same to concerned HOD and Deputy Registrar (Academics).

8.5 Every faculty offering a course will take attendance till three calendar days before the last instruction day in the semester. The percentage of attendance, calculated up to this instruction day, will be indicated in code number/letter as follows:

Attendance rounded to	Code No/letter
95% and above	H
85% to 94%	9
75% to 84%	8
Below 75%	L

A student who has attendance code letter L will not be allowed to sit for end semester examination in the course in which the short fall exists.

(9) Dissertation Work

9.1 Allocation of Dissertation: The broad areas in which M.Tech dissertation work is feasible will be displayed by the concerned HOD on the notice board. The minimum qualification of a faculty member for M.Tech supervisory work shall be Ph.D or M.Tech with 5 years teaching/research experience. The students will be asked to submit at least three preferences to the HOD. The HOD in consultation with associated faculty members will allocate the candidates to the faculty members. If the type of work is interdisciplinary in nature, a maximum of two dissertation guides may be allowed. The above allocation of M.Tech thesis topics should be completed by the end of the second semester.

9.2 (a) Submission of dissertation:

i). The candidate is required to submit three copies of M Tech thesis (spiral bound) to the Office of concerned HOD through his/her supervisor(s).

ii.) The candidate will submit a certificate from his/her research supervisor stating that the research work undertaken has been original and has not been published/printed anywhere else for the award of any degree.

iii.) A certificate from the Accounts Section of the institute stating 'no dues pending' against candidate will also be submitted along with the thesis.

iv.) HoD will forward the list of all eligible candidates along with the proposed list of Examiners (Minimum six names) to the office of Dean (Academic) cum Chairman BOAC within three working days of the last date of submission of Thesis/Dissertation .

(b) Evaluation of Dissertation: The credit allotment will be based accordance to the following weightage.

First presentation:	20%
Second presentation (pre submission)	20%

Thesis evaluation by external examiner   30%

Viva voce Examination   30%

First and second presentation shall be made towards the end of third and fourth semester, respectively. During first and second presentation, the candidate will be jointly evaluated by HOD/nominee and the candidate's dissertation guide. The thesis examination shall be conducted in open public defence. If a candidate is found unsuitable, he/she can appear again in the next semester provided the final submission should be within three years.

9.3   Panel of examiners for viva-voce examination:

1.   Internal Examiner – dissertation guide

2.   External Examiner– To be appointed by the Chairman, BOAC from a panel of Six examiners submitted by the dissertation guide through the Head of the Department to the Chairman, BOAC.

3.   Head of the concerned Department.

9.4   The candidate shall prepare his/her dissertation under the supervision of the concerned faculty at the Institute. If however, the HOD is convinced that facilities for carrying out the work exist elsewhere (recognized by NIT, Jalandhar) the candidate may be deputed by Chairman, BOAC to some other Institute/Organization after the recommendation of the concerned guide and Head of the Department.

9.5   In case the dissertation supervisor leaves the Institute and joins some other Institution or some R & D organization, he/she may continue to guide the research work of the candidate registered with him/her provided he/she has guided the candidate for minimum period of 6 months. Further in case of any dispute between the candidate and guide, the case will be referred to Chairman, BOAC for necessary action.

9.6   The dissertation shall present an orderly and critical exposition of the existing knowledge of the subject or shall embody results of original investigation and shall demonstrate the capability of the candidate to do independent research work.

9.7   **Thesis write up: -** The dissertation should be written in English in specific   format. It should include the following;

a)   Abstract

b)   Introduction and objectives

c)   Literature review

d)   Experimental/Theoretical work

e)   Results and discussions

f)   Conclusions

g)   References

Further following guidelines should be followed:

> The dissertation should be typed 1.5 spaced, on both sides of the paper, of approximately 200 x 250 mm or A4 size, leaving 40 mm margin on the left-hand side. Six copies of the dissertation, with all photographs and illustrations are to be submitted.

> Headings of sub-divisions of the text should be in lower case capitals, left aligned and bold. Sub-headings should be in lower case capitals and placed immediately next to the margin and the text should start from the next line. Further, sub-heading should be lower case capitalized first letter only and placed next to the margin with colon. The matter would be in continuation of sub-heading.

> All symbols should be defined wherever they first appear and confirm to the internationally accepted symbols.

> Tables should also be typed on paper size 200 x 250 mm. These should be numbered serially with the work Table towards the left margin followed by title at the top of the table. Figure captions should be provided at the bottom of the figure.

> References cited in the text should be indicated by the author's name and the year of publication in parenthesis. They should not be numbered and should be typed at the end of the paper in the alphabetical order. The title of the work referred to should be within inverted commas. References should be given in the following form;

> (a)   Kawabata S (1996) "Micro-measurement of the mechanical Properties of Single Fibre" in "Modern Textile Characterization Methods", Ed.,Mastura Raheel, Marcel Dekker, Inc.,pp.311-328.

> (b)   Terzaghi K (1943), "Theoretical Soil Mechanics", John Wiley and Sons, Inc, New York, 210

> (c)   Terzaghi K (1943), "Critical Height and Factor of Safety of Slopes against Sliding", Proc.Ist Int.Conf.Mech. and Foundation Engineering Vol.1, pp.156-161.

> (d)   Terzaghi K and Lacroix Y (1964), "Mission Dam: An Earth and Rock-fill Dam on Highly Compressible Foundation", Geotechnique, Vol.No.1, pp.13-50.

> (e)

(10)   Academic System

The academic system at NIT Jalandhar is framed on credit-based semester examination system. The credit system envisages a continuous evaluation of student's performance, and provides flexibility for academic progress at an optimum pace based on individual ability and convenience, subject to the constraint of the minimum requirements for continuation in the academic programme.

The student is awarded a letter grade from the prescribed grading system in each course registered by him. For each pass grade, the students accumulate the course credits as earned credits. The academic

performance of the student is indicated in terms of the number of credits that he/she earns and the weighted grade point average. A specified minimum number of credits should be acquired on semester or session basis in order to qualify for continuation the academic programme and for the award of M.Tech degree.

Grades:

The grading system, the evaluation in terms of marks is replaced by the award of letter grades. The structure and guidelines for award of grades are given as under:

Grade	Points	Description of performance	Recommended cut off Marks *
S	10	Outstanding	90
A	09	Excellent	80
B	08	Very Good Good	70
C	07	Good	60
D	06	Average	50
E	04	Marginal	40
U	-	Unsuccessful	-
I	-	Incomplete	-
W	-	Withheld due to shortage of attendance or withdrawal	-
NP	-	Audit Pass	-
NF	-	Audit Fail	-

Subject to confirmation based on standard deviation, if the sample size is greater than 20, and is flexible to the recommendations of the individual course coordinators with proper justification.

The grades will be awarded to a student in each registered course, based on his/her performance evaluated through a prescribed scheme of evaluation. In theory courses, the evaluation is weighted on class tests, assignment and end semester examinations in prescribed proportions. The recommended weight- age for class tests is 40%, for assignments 10% and for end semester's examination is 50%. The credits for the courses in which a student has obtained "E" (minimum passing grade for a course) or a higher grade will be considered as credits earned by him/her. In addition, courses up to a maximum of 8 credits in case of B Tech students in which a student has got 'NP' grade will not be counted towards his/her earned credits.

For the other (elective) course in which U or W grade have been obtained, the student may take the same course or any other course from the same category when it is offered next. Further, 'U' grades secured in any course stay permanently on the grade card. The weightage of these grades is not counted in the calculation of the SGPA and CGPA.

An 'I' grade denotes incomplete performance in any course due to absence at the end of semester. Upon completion of all course requirements, the "I" grade is converted to a regular grade.

These grades (NP and NF) are awarded in a course that the student opts to audit. Audit applications are allowed during he first four weeks of a semester. The audit pass (NP) grade is awarded if a minimum 'E' grade is obtained in the course and attendance is above 75% in the classes. If either of these requirements is not fulfilled he audit fail (NF) grade is awarded. In courses, where NP grade is obtained, the corresponding course credits are considered in the calculation of SGPA or CGPA.

A 'W' grade is awarded in a course where the student has opted of withdraw from the course. Withdrawal from a course is permitted until one week after the class test-I.

Grade Point Averages:

The performance of a student will be evaluated in terms of two indicates, viz, the semester Grade Point Average (SGPA) which is the Grade Point Average for a Semester and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point of time. The SGPA is calculated on the basis of grades obtained in all courses, except audit courses, registered for in the semester.

$$SGPA = \frac{\Sigma \text{ (Course credit x Grade point) except audit course}}{\Sigma \text{ Course credits except audit courses}}$$

The CGPA is calculated on the basis of all pass grades, except audit courses obtained in all completed semesters

$$CGPA = \frac{\Sigma \text{ (Course credit x Grade point) for courses with pass grade except audit   courses}}{\Sigma \text{ (Course credits) of courses with pass grade except audit courses}}$$

(11) Leave Rules for Full-Time Students

11.1 All M.Tech students would apply to the concerned HOD for leave stating the reasons whenever they are not in a position to attend the classes/work related to dissertation. They will not be allowed to avail an unauthorized leave even if they have fully utilized the permissible leave.

11.2 All M.Tech students are eligible for leave of 30 days in a year (15 days per semester). The intervening holidays will be treated as a part of leave with provision of suffixing and prefixing holidays. In no way the leave rules would affect the attendance requirements for M.Tech students.

11.3 All M Tech students shall be eligible to leave station for visiting other places preferably after completion of their course work or during vacations when there is no teaching work scheduled, if

recommended by Supervisor(s) and HOD, and approved by Dean Research and Industrial Liaison well in advance for various purposes, e.g. library consultation, meeting experts, presentation of research papers/participation in the conferences/short term courses/symposiums etc., getting samples tested from other laboratories, using the lab facilities elsewhere if the same is not available at NIT Jalandhar, interaction with the External Supervisor, and any other similar purpose as recommended by his/her Supervisor(s) and HOD. For these purposes, he/she shall be permitted for 30 days per year. The leave as mentioned at Clause 11.2 shall be in addition.

12. Discipline

Every M.Tech student is required to observe proper discipline and decorous behaviour both inside and outside the campus. He/she should not indulge in any activity, which will tend to lower the prestige of the institute.

Any act of indiscipline on the part of M.Tech student, which is reported to Chairman, BOAC will be referred to the Discipline Committee of the Senate from time to time. The Committee will investigate the charges. If the charges are substantiated, it will recommend suitable punishment for the same to the Director. The decision of the Director will be final in this regard.

(13) Project work in Industry or R & D works

The students may also opt to carry out their dissertation work in industry (having R & D facilities) and R&D organizations (like national research laboratories, etc.) during the final semester, subject to the following condition:

"A committee constituted by the Chairman, BOAC on the recommendations of the Head of the Department shall examine all such request and will give the approval."

The students who are allowed to do the dissertation in the industry/R & D organizations will have to pay tuition fee and other charges to the institute for 4th semester also.

(14) Award of M.Tech Degree

An M.Tech student will be eligible for the award of M.Tech degree
   (i)   if he/she has successfully completed all the core courses/elective courses, dissertation work and any other requirement of the curriculum as required by the institute Senate.
   (ii)   If he/she has earned the required credits as applicable to the respective batch and approved by the Institute's Senate.
   (iii)   If he/she has obtained a minimum CGPA of 6.0 in the entire course.
   (iv)   If he/she has paid all the institute dues including hostel dues, library dues, etc.
   (v)   No disciplinary action is pending against him/her.

The award of M.Tech degree will be approved by the Board of Governors of the institute on the recommendations of the institute Senate.

(15)   Stipend cum Teaching Assistantship

M. Tech full time students may be awarded scholarship-cum-teaching assistantship as per the guidelines of Ministry of HRD, Govt. of India.