

M.TECH. (ENGINEERING) PROGRAMME REGULATIONS

THE REGULATION FOR M.TECH 2 YEAR DEGREE PROGRAMME (CHOICE BASED CREDIT SYSTEM)*

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THE REGULATION FOR M.TECH 2 YEAR DEGREE PROGRAMME* (CHOICE BASED CREDIT SYSTEM)

1. INTRODUCTION

Jagan Nath University has a strong commitment to high quality teaching and research for quality education and enhance the professional competence of the students rich in knowledge and innovative in approach. The University offers M. Tech programs to the eligible students who are interested in pursuing higher post-graduate degree in Engineering and technology. The aim of the program is to train the students in high level theoretical and practical knowledge that enables them to tackle complex problems of design and development in the industrial fields as well as pursue further academic excellence through research. The programs provide enough flexibility in respect of lecture courses, laboratory and project work as well as by research, to achieve the objectives.

Recently, the University Grants Commission (UGC) has stressed on speedy and substantive academic and administrative reforms in higher education for promotion of quality and excellence. The Action Plan proposed by UGC through its guidelines delimits the need to consider and adopt Semester System, Choice Based Credit System (CBCS) and Flexibility in Curriculum Development and Examination Reforms in terms of adopting Continuous Evaluation Pattern by reducing the weightage on the semester-end examination so that students enjoy a de-stressed learning environment.

2. PREAMBLE

The Degree of Master of Technology (M. Tech) is the post-graduate degree in Engineering and Technology of this University.

The M. Tech. degree will be awarded to a candidate, who, as per these regulations, has passed the examinations after completing the prescribed course work, Seminars, submitted the dissertation containing the report of the M. Tech Project work , in a discipline relevant to his course of study, that makes a

contribution to the advancement of knowledge or to innovative methods of application of existing knowledge, or development of equipment/ software ,so as to contribute to the advancement of knowledge/ better understanding of the processes.

3. OBJECTIVES

To provide excellent education and guidance in the branches of engineering and technology at postgraduate and research level.

To provide opportunity to undertake real-life project work, applying the skills and knowledge developed in the taught element of the course Advancement and proliferation of scientific and technological knowledge.

To prepare trained manpower to carry out innovative research for creating intellectual property through master and doctoral programmes.

Inculcate strong research and innovation based mindset in the future engineers, teachers and scientists.

To ensure high standard of performance in teaching & research

To develop the scientific and engineering manpower of the highest quality to cater to the needs of the industries and research organization

To provide a broad grasp of the fundamental principles of the scientific and technological methods through its curriculum.

Foster links between academia, R & D institutions and the industries.

4. TITLE AND COMMENCEMENT

4.1 This Regulation shall be called ***THE REGULATION FOR M.TECH 2 YEAR DEGREE PROGRAMME* (CHOICE BASED CREDIT SYSTEM)***

4.2 This Regulation shall come into force with effect from the academic year 2015-2016.

1 DEFINITIONS

- a. **Programme:** means an educational programme leading to award of M.Tech 2 year Degree.
- b. **Academic Year:** means Two consecutive (one odd + one even) semesters constitute one academic year.
- c. **Choice Based Credit System (CBCS):** The CBCS provides choice for students to select from the prescribed courses [Core, Elective, Ability Enhancement Compulsory (AECC) & Skill Enhancement (SEC)]
- d. **Course:** Usually referred to, as ‘papers’ is a component of a programme. All courses need not carry the same weight. The courses should define learning objectives and learning outcomes. A course may be designed to comprise lectures/ tutorials/laboratory work/ field work/ outreach activities/ project work/ viva/ seminars/

term papers/assignments/ presentations/self-study etc. or a combination of some of these.

- e. **Credit Based Semester System (CBSS):** Under the CBSS, the requirement for awarding a degree is prescribed in terms of number of credits to be completed by the students.
- f. **Credit Point:** It is the product of grade point and number of credits for a course.
- g. **Credit:** A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.
- h. **Cumulative Grade Point Average (CGPA):** It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.
- i. **Grade Point:** It is a numerical weight allotted to each letter grade on a 10-point scale.
- j. **Letter Grade:** It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P and F.
- k. **Semester Grade Point Average (SGPA):** It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various
 - b) courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.
 - a. **Semester:** Each semester will consist of 18 weeks of academic work equivalent to 90 actual teaching days and 3-4 weeks approximately of examination etc. The odd semester may be scheduled from July to December and even semester from January to June.
 - b. **Transcript or Grade Card or Certificate:** Based on the grades earned, a grade certificate shall be issued to all the registered students after every semester. The grade certificate will display the course details (code, title, number of credits, grade secured) along with SGPA of that semester and CGPA earned till that semester.
 - c. **External Examiner:** shall mean an examiner who is not is the employment of the University.
 - d. **Student:** shall mean a person admitted to the Faculty/ Schools of the University for any of the academic programmes to which this policy is applicable.
 - e. **University:** shall mean Jagan Nath University, Bahadurgarh.
 - f. **Internal Evaluation:** Continuous Assessment Test conducted during the semester.
 - g. **External Evaluation:** End-Term examination held at the end of each semester.
 - h. **Rounding off Marks:** shall mean, that if part is one-half or more, its value shall be increased to one and if part is less than half then its value shall be ignored for getting letter grade and grade point.
 - i. **Enrollment:** shall mean the student taking admission and registered for pursuing a programme at Jagan Nath University

- j. **Migration:** shall mean the student of Jagan Nath University migrating to another University/Institute or the student of other University/Institute taking admission to Jagan Nath University.

6. THE COURSE & THE DURATION

- 6.1 The M. Tech programme will be of minimum 2 years duration. The maximum period to complete the M. Tech programme is 4 years .
- 6.2 Master of Technology Programme leading to M. Tech. will be offered in the following branches of in the Faculty of Engineering and Technology of the University

Computer Science and Engineering

Electronics and Communication Engineering

Civil Engineering

Mechanical Engineering

Electrical Engineering

Any other branch / area which the University may decide from time to time.

- 6.3 Each M.Tech. Programme will have a curriculum, with syllabi consisting of:
- (a) Core courses, which give a broad base in the main field of study in the academic program concerned;
 - (b) Elective courses chosen by the student in consultation with the faculty adviser;
 - (c) Project work where special emphasis is laid on the application of knowledge to real life problems;
 - (d) The program will also include seminars and practical training, as prescribed by the University.
 - (e) A student will have to register in all the core courses listed in the curriculum of his/her selected area of specialization and successfully complete all of them. Electives will have to be taken from the courses offered by the Department in that particular semester from among the list of approved courses.
- 6.4 (a) Each Academic Year shall be divided into two Semesters, i.e. July to November / December and January to May / June
- (b) Each Semester shall consist of minimum 18 weeks.
 - (c) The Courses and the syllabi shall be designed by the Faculty of Engineering & Technology and be approved by the Academic Council of the University time to time.

1 ELIGIBILITY FOR ADMISSION

- f) The candidate must have passed B.E./ B. Tech or equivalent degree or a Masters degree in respective or allied

discipline with a minimum of 50% aggregate (all semesters/years) marks or CGPA of 5 in 10 point scale and possess a valid GATE score or qualified through Admission Test prescribed by the Jagan Nath University. Relaxation of 5% marks in qualifying examination will be given to SC/ST/OBC candidates as per State Govt. Policy.

a The M.Tech Programme is open to working professionals.

c) ADMISSION PROCEDURE

8.1 Admission shall be made strictly on merit by the university admission committee either by holding written admission test or interview of the candidates.

8.2 The result of the admission test, in order of merit, shall be notified in the office notice board and/or website, if any. Any selected student who fails to pay his/her admission fee and other charges by the date fixed for such payment shall forfeit his/her claim for admission.

8.3 There shall be no relaxation of marks in minimum eligibility for admission.

d) ATTENDANCE PROVISION FOR END TERM SEMESTER EXAMINATION

9.1 No student shall be allowed to appear in the end term semester examination in a paper if he/ she has not attended minimum of **75%** of the classes held in the paper concerned including tutorials/practicals /viva voce etc. conducted in respect of that paper.

9.2 If a student for any exceptional reason fails to attend **75%** of the classes held in any paper, the Dean / HoD of the department may allow him/ her to take the examination if he/she attended at least 65% of the classes held in the paper concerned and attended 75% of classes in all the papers taken together.

9.3 Provided that if the percentage of attendance is deficient on account of:-

(i) Participation in Inter-University, University or Inter-Collegiate Sports tournaments/Youth Festivals /University Level Debates/ Cultural

Activities, National and International Tournaments, with the previous sanction of the Dean/HoD of Faculty of Engineering & Technology.

(ii) Voluntary donation of blood certified by a Government Doctor of Gazetted rank or University medical officer.

(iii) Attendance and/or participation in International/National / State competitions

(iv) Attendance at the extension lecture (s) organized by the Faculty of Engineering & Technology.

Credit may be given for the number of days on which lectures were delivered or sessional/practical work done during the period of attendance or participation aforesaid, provided that the total period of absence shall not exceed 15 days in a semester.

10. PROHIBITION OF LATERAL ENTRY/ EXIT AND MIGRATION

- 10.1 There shall be no lateral entry or exit at any intermediary stage of M.Tech degree course.
- 10.2 However the migration may be allowed as per University Rule.

11. PROHIBITION TO REGISTER IN OTHER COURSES

The candidates admitted to the Course, shall not be allowed to pursue any other course except certificate course in any Indian or Foreign language or computer application being conducted by this University on part-time basis in the evening or through Distance Learning with prior permission of the Dean / HoD, Faculty of Engineering & Technology otherwise his candidature form M.Tech 2-Year Degree Course will be cancelled forthwith.

12. EXAMINATION AND EVALUATION

- 12.1 The medium of instructions and examination shall be English
- 12.2 Candidates shall be examined according to the scheme of examination and syllabus as approved by the Academic Council from time to time. A candidate who fails in an examination, or having been eligible, fails to appear in an
 - 12.3 examination, shall unless approved otherwise by the Academic Council, take the examination according to the syllabus prescribed by the regular students appearing for that examination.
- iii. To pass each semester examination, a candidate must obtain at least 40% marks in each written paper, practical work /Viva-Voce /Dissertation and 50% in aggregate.
- iv. Each written paper for the respective semester examination shall be set and evaluation of the answer books shall be done as per the University rules
- v. The assessment of End Term Semester Examination will be made out of 100 marks in theory Papers and 50 Marks will be for Internal Assessment (Assignment, Presentation etc.).
- vi. The Dean/HoD will preserve the records of the sessional/practical work upto six months from the date of the declaration of the concerned semester examination.

9.3 EXTERNAL EVALUATION: END-TERM EXAMINATION

- i. The End Term examinations shall ordinarily be held at the end of every semester i.e. November-December or May-June, as the case may be, as per the schedule to be notified by the Controller of Examination. The dates for the practical examinations would be decided by the HODs of respective departments in consultation with the Dean of the Faculty.
- ii. The examiners for the end-term examination will be appointed by the Vice-Chancellor from the panel of the examiners to be supplied by HOD / DEAN.

- iii. At least 50% of the paper setters for the end-term examination will be External Examiners.
- iv. The manuscript of the question paper set by the examiner will be moderated by the Moderation Committee consisting of (i) Dean of Faculty (ii) HoD of the Department .After modifications, if needed; it will be handed over to the COE for printing and conduct of examinations.
- v. The answer books will be evaluated by the persons who set the question paper. In case of his inability to assess the answer books, for whatever reasons, the Vice-Chancellor may get them assessed by any other examiner from the Panel or Internal Examiner.

14. STANDARD OF PASSING THE SEMESTER EXAMINATIONS

A candidate, who fails in a semester examination shall be exempted from re- appearing in the paper(s) in which he may have obtained at least 40% marks . Such a candidate shall be allowed to appear, for passing in the remaining paper(s), only at the next respective semester examinations.

Provided that a candidate for the M.Tech 2-Year Course must pass all the examinations, i.e., I/II/III & IV within four years of his admission to the first year class of the course failing which he will be deemed to be unfit for the course and shall not be allowed to appear as a regular student or as an ex-student unless has been otherwise allowed by the Academic Council of the University.

2) RE-APPEAR/IMPROVEMENT IN END TERM EXAM

- a) The re-appear/improvement in End Term Examinations for Odd semester will be held along with the Odd Semester regular End Term examinations and for Even Semester with End Term examinations along with Even Semester regular End Term examinations.
- b) A student who has to re-appear/improve in a End-Term examination shall be examined as per the syllabus, which was in force at the time when he/she took the examination .

A candidate, who fails in a semester examination shall be exempted from re-appearing in the paper(s) in which he may have obtained min. pass marks. Such a candidate shall be allowed to appear, for passing in the remaining paper(s), only at the next respective semester examinations.

- d) A candidate who has passed in a paper(s), may be allowed to improve the paper(s), only in the next respective semester examinations.
- e) The previous internal marks already obtained by the student shall be taken into account without any modification.

16. SEMINAR

All candidates shall present one seminar in the Third semester on the topic chosen from the relevant field. The

HOD of the concerned Department shall organize/conduct such seminar through concerned faculty. The Assessment marks for the seminar shall be awarded by the concerned faculty.

The student will submit two copies of Seminar Report to the guide(s) at any time during the semester in which he/she is registered. The student shall make Power Point Presentation on his/her seminar as per time schedule decided by the department.

17. GUIDE

17.1 All the selected candidates shall be assigned one or two Guide(s) by the university. The other guide may be from the place of work of the candidate(s).

17.2 Changes of guide(s) under exceptional circumstances shall be permitted by the Dean of the Faculty, on the recommendation of the Head of the Department after obtaining the consent of (i) the candidate (ii) the present Guide(s) and (iii) the proposed Guide(s).

17.3 Whenever a Guide leaves the University permanently or temporarily for a period exceeding one year, a new Guide shall be appointed. However if the Guide leaves the university for less than a year, the Dean of the Faculty shall make alternate arrangement, if necessary for the guidance of the student.

17.4 Eligibility of a Guide

- a) The faculty member possessing M.E or M. Tech and/or Ph.D in the relevant field.
- b) In case of interdisciplinary areas, at least one Guide must belong to the discipline in which the student is registered. It is mandatory to have one of the Guide from the parent department.
- c) In case the student intends to take a Guide from his work place, the selected Guide should be holding M.E or M. Tech and/or Ph.D in relevant field, shall be recognized as a guide.

18. SUBMISSION OF DISSERTATION

18.1 The following documents will have to be submitted by the Candidate while submitting the dissertation.

(a) Certificate from the candidate counter signed by the guide that the dissertation does not contain any work that has been previously submitted for the award of any degree and

(b) Certificate by the guide that the dissertation is fit for submission and evaluation.

18.2 The M. Tech dissertation shall be written in English in approved format.

18.3 The candidate shall submit two copies of dissertation to the HOD of the concerned departments within the prescribed time limit.

18.4 The HOD upon satisfaction shall forward the same to the Dean of the Faculty for choosing one external Examiner.

19. EVALUATION OF DISSERTATION

19.1 The External Examiner shall submit his Report on the following points:

- (a) A critical survey and evaluation of the quality and quantity of the work embodied in the dissertation.
- (b) Questions, if any to be asked or point to be clarified at the viva voce examination, and
- (c) A definite recommendation as to whether the dissertation is to be accepted for the award of M.Tech.
- (d) If the Examiner recommends a revision of the Dissertation, than he should indicate the areas which need to be revised. In such a case, a copy the Examiner's Report shall be confidentially made available to the guide(s). Who shall send comments to Dean of the faculty?
- (e) A dissertation may be considered acceptable for holding the viva voce examination if the examiner gives a positive recommendation;
- (f) If the Examiner recommends acceptance of the dissertation subject to the minor modifications, the same be resubmitted the modification, with in a period of three months after the necessary modifications. The dissertation so resubmitted shall be examined by the same examiner. The viva-voce will conducted by a Board consisting of concerned HOD, guide and the external examiner;
- (g) A dissertation rejected by the Examiner may be submitted to second Examiner after revision, not earlier than one semester and not later than two semesters from the date of such intimation to the candidate by the university
- (h) Rejection of the dissertation so re-submitted will disqualify the candidate from further consideration for the award of the M. Tech degree.
- (i) The Board of Examiners shall submit its report in prescribed format to the University.
- (j) After satisfactory completion of the viva voce examination, the M. Tech degree may be conferred upon the candidate after approval by the competent bodies / authority of the University.
- (k) If a dissertation has been accepted but the candidate fails at the viva voce examination he/she may be permitted by the Dean of the Faculty to re appear for the viva voce examination again at the later date.

20. THE ACT OF PLAGIARISM

In the case of M. Tech candidates, who have copied another dissertation / thesis / book for M. Tech degree his / her dissertation shall be forfeited and his / her M. Tech registration shall be terminated from this university and also he / she shall be debarred to register for any other programme in this University. He shall also be liable for all legal action for such plagiarism.

For the abetment of above such action knowingly, by the guide, the case will be placed before Academic Council for its consideration and necessary action.

21. SEMESTER PROMOTION

- (a) A candidate who has appeared and failed or having been eligible but did not appear in the end term semester examination shall be promoted to the next higher semester.

Students are required to successfully complete the entire course within four years from admission to the course.

22. CRITERION FOR AWARDDING GRADING SYSTEM

- 22.1 CRITERION for Awarding SGPA and CGPA:** The criterion for awarding the Semester Grade Point

Average (SGPA) and Cumulative Grade Point Average (CGPA) for the M.Tech programme shall be as follows:

- I. The criterion for passing in a subject is that a student should secure minimum 40% marks in individual paper and 50% in the semester aggregate.
- II. A student obtaining less than pass marks as specified above, in each subject (sum of internal and End-Term examinations) he will be declared fail in that subject and will have to re-appear in a End-Term examination of the course in subsequent odd / even semester end term examination, subject to maximum permissible period of n+2 years / n+4 semesters to complete the course.
- III. The University has adopted Absolute Grading System for converting marks into grades.
- IV. The formula of 10- point grading system for conversion of marks obtained into Letter Grades and converting Letter Grades to Grade Point is given below:

Table 1: Marks, Letter Grades and Grade Points

Marks	Letter Grade	Grade Points
91-100	O (Outstanding)	10
81-90	A+(Excellent)	9
71-80	A(Very Good)	8
61-70	B+(Good)	7
51-60	B(Above Average)	6
46-50	C(Average)	5
40-45	P (Pass)*	4
0-39	F(Fail)	0
-	AB (Absent)	0

***Passing Marks: M.Tech - minimum 40% marks in individual paper and 50% in aggregate.**

- d) While converting the marks into Letter Grade, the rounding off marks must be considered.
- e) A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.
- f) For non credit courses "Satisfactory" or Unsatisfactory" shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

22.2 Computation of SGPA and CGPA : The university has adopted UGC recommended procedure for computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

- a) The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the papers/ courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

$$\text{SGPA (Si)} = \frac{\sum (C_i \times G_i)}{\sum C_i}$$

Where C_i is the number of credits of the i^{th} course and G_i is the grade point scored by the student in the i^{th} course. The university shall issue

Semester Grade Card to the student.

- b) The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

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

Where S_i is the SGPA of the i th semester and C_i is the total number of credits in that semester.

- c) The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Illustration of Computation of SGPA and CGPA and Format for Transcripts

- a) **Computation of SGPA and CGPA Illustration for SGPA**

Course	Credit	Grade Letter	Grade Point	Credit Point (Credit x Grade)
Course/Paper 1	3	A	8	3x8=24
Course/Paper 2	4	B+	7	4x7=28
Course/Paper 3	3	B	6	3x6=18
Course/Paper 4	3	O	10	3x10=30
Course/Paper 5	3	C	5	3x5=15
Course/Paper 6	4	B	6	4x6=24
	20			139

Thus, $\text{SGPA} = 139/20 = 6.95$

- b) **Illustration for CGPA**

Semester-1	Semester-2	Semester-3	Semester-4	Semester-5	Semester-6
Credit: 20 SGPA:6.9	Credit: 22 SGPA:7.8	Credit: 25 SGPA:5.6	Credit: 26 SGPA:6.0	Credit: 26 SGPA:6.3	Credit: 25 SGPA:8.0

Thus, $\text{CGPA} = 20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0$

$$\frac{\text{-----}}{144} = 6.73$$

23. CRITERION FOR CREDIT

- (a) In case a student secures minimum passing marks (40% and above) in a Theory / Practical/Viva/Dissertation, he / she will earn the assigned credit of that particular paper.
- (b) A student is eligible for the award of degree, if he / she earn minimum credits required for that particular programme with 50% Semester Aggregate.

- (c) **Maximum & Minimum Credits** : The total number of the credits of the M.Tech Programme is 64 each student shall be required to appear for examination in all courses. However, for the award of the degree a student should secure at least 60 credits.

Relaxation of credits will be given only in Electives Papers.

24. AWARD OF THE DEGREE

A student shall be eligible for the award of the Degree of .M.Tech after he/she has successfully completed all the prescribed courses in all the semesters and his or her character and conduct are found to be satisfactory during the course.

25. WITHDRAWAL OF DEGREE

A degree awarded by the University may be withdrawn if it is found at the later stage that the candidate has submitted any forged document or ineligible at the time of admission to the course.

26. SCHOLARSHIPS, AWARDS AND MEDALS

Students excelling in academics, co-curricular and extracurricular activities are felicitated through various awards and scholarships instituted by the University.

A candidate with highest CGPA would be declared Topper. In case of tie of CGPA, the student senior in age will be the topper. Gold, Silver and Bronze medal will be awarded on the basis of securing first three highest CGPA in the course concerned.

27. JURISDICTION

All disputes are subject to the jurisdiction at Jhajjar.

Note: Approved by AC vide Resolution No. 1.9 dated 07-09-2015 & BOM vide Resolution No.1.7 dated 14-09-2015.