

Academic Regulations (R21)
COURSE STRUCTURE & DETAILED SYLLABUS
(CHOICE BASED CREDIT SYSTEM (CBCS))

**MASTER OF TECHNOLOGY
IN
COMPUTER SCIENCE & ENGINEERING**

For
M. Tech. - Regular Two Year Post Graduate Degree Programme
(Applicable for the batches admitted from 2021 - 2022)



Balaji Institute of Technology & Science
(UGC - Autonomous)

Approved by AICTE, New Delhi, Affiliated to JNTUH
Accredited by NAAC with A+ Grade and NBA
Laknepally (V), Narsampet (M), Warangal District - 506331, Telangana

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FOREWORD

Balaji Institute of Technology & Science, established in the year 2001 is Approved by AICTE, New Delhi, Affiliated to JNTUH and Accredited by NBA and NAAC 'A+' Grade with 3.37 CGPA in April 2021. The institution has commenced functioning independently within the set norms prescribed by UGC and AICTE.

The performance of any reputed institution manifests the confidence that the prestigious monitoring body, in terms of upholding its spirit and sustenance of the expected standards of functioning on its own consequently facilitating the award of degrees for its students. Thus, an autonomous institution is provided with the necessary freedom to have its own curriculum, examination system and monitoring mechanism, independent of the affiliating University but under its observance.

Balaji Institute of Technology & Science takes pride for having won the confidence of such distinguished academic bodies meant for monitoring the quality in technology education. Besides, the institution is delighted to sustain the same spirit of discharging the responsibilities that it has been conveying more than a decade to attain the current academic excellence. Consequently, statutory bodies such as the Academic Council and the Boards of Studies have been constituted under the supervision of the Governing Body of the College and with the recommendations of the JNTUH, Kukatpally, Hyderabad, to frame the regulations, course structure and syllabi for autonomous status.

The autonomous regulations, course structure and syllabi have been framed in accordance with the vision and mission of the institution along with certain valuable suggestions from professionals of various ancillary fields such as the academics, the industry, the research and all those with a noble vision to impart quality technical education and contribute in presenting full-fledged engineering and management graduates to the society.

All the faculty members, the parents and the students are requested to study all the rules and regulations carefully and approach the Principal to seek any clarifications, if needed, without presumptions, to avoid unwanted subsequent inconveniences and embarrassments.

The cooperation of all the stakeholders is sought for the successful implementation of the autonomous system in the larger interests of the institution and for brightening the career of the students and other stakeholders.

BALAJI INSTITUTE OF TECHNOLOGY & SCIENCE

Vision: To be a centre for excellence in preparing the graduates professionally committed, intellectually adept and ethically balanced with high standards by imparting quality education with international standards to excel in their career to meet the challenges of the modern world and adapt to the technologically changing environment.

- M1:** To strive hard to produce technically trained human resources to serve the present and future global needs by providing quality education.
- M2:** To provide value based training in technological advancements and employment opportunities to students by strengthening institute's interaction with industries.
- M3:** To disseminate knowledge of need based technical education, innovative learning and research & development with holistic approach.

Department of Computer Science & Engineering (CSE)

Vision: To become competent for excellence in the stream of Computer Science & Engineering which cater to the needs of industry and society.

- M1:** To conduct programs in latest technologies to serve the needs of industry and society.
- M2:** To establish interaction with industry to meet the technological advancements.
- M3:** To disseminate knowledge among students through effective teaching and learning process.

M.Tech. - Regular Two Year Post Graduate Degree Programme

(For batches admitted from the academic year 2021 - 22)

PREAMBLE

For pursuing M.Tech. - Regular Two Year Post Graduate Degree Programme offered by **Balaji Institute of Technology & Science (BITS)** under Autonomous status will herein be referred to as BITS (Autonomous).

All the specified rules are herein approved by the Academic Council. These rules will be in force and are applicable to students admitted from the academic year 2021-22 onwards. Any reference to “**Institute**” or “**College**” in these rules and regulations stand for BITS (Autonomous).

All the rules and regulations specified shall hereafter be read as a whole for the purpose of interpretation, as and when a doubt arises, the interpretation of the Chairman, Academic Council is final. As per the requirements of statutory bodies, the Principal, BITS (Autonomous) shall be The Chairman, Academic Council.

1. POST GRADUATE PROGRAMS OFFERED

Balaji Institute of Technology & Science, an autonomous college affiliated to JNTUH, offers M.Tech. -Regular 2 years (4 semesters) Post Graduate Degree Programme, under Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) are taken as 'references' for the present set of Regulations with effect from the academic year 2021 - 22 onwards. The following specializations are offered at present for the M. Tech. programme of study.

Sl. No.	Programme	Offering Department
1	Computer Science and Engineering	Computer Science and Engineering

2. ADMISSION CRITERIA AND MEDIUM OF INSTRUCTIONS

2.1. Admission into first year of M.Tech. - Regular Two Year Post Graduate Degree Programme

2.1.1 Eligibility: A candidate seeking admission into the first year of M.Tech shall be made subject to eligibility and qualification as prescribed by the university from time to time. Admissions shall be made on the basis of merit/rank obtained by the candidate qualified at TSPGECET/GATE or any entrance test

conducted by the university or on the basis of any other order of merit as approved by the university, subject to reservations as laid down from time to time by government of Telangana.

- 2.1.2 Admission Procedure:** Admissions are made into the first year M.Tech. as per the stipulations of the TSPGECET/GATE.
- (a) Category A: 70% seats are filled through TSPGECET/GATE counseling.
- (b) Category B: 30% seats are filled by the management.
- 2.2. College Transfers:** There shall be no college transfers after the completion of admission process.
- 2.3. Medium of Instructions:** The medium of instructions and examinations for the entire M.Tech. - Programme will be in **English** only.

3. M.Tech. PROGRAMME (PGP in E&T) STRUCTURE

3.1 Admitted under M.Tech. (PGP in E&T) - Regular Two Year Post Graduate Degree Programme:

3.1.1 A student after securing admission shall pursue the post graduate programme in M.Tech. Programme for a minimum period of two academic years (4 semesters), and a maximum period of four academic years (8 semesters) starting from the date of commencement of first year first semester, failing which he/she shall forfeit his/her seat in M.Tech. Programme.

3.1.2 I Year is structured to provide typically 18 Credits in each of the I and II Semesters, and II Year 16 credits in each of the III & IV semesters, totaling to 68 Credits for the entire M.Tech. Programme.

3.1.3 Each student shall secure 68 credits (with CGPA \geq 6) required for the completion of the post graduate programme and award of the M.Tech. Degree.

3.2 UGC/AICTE specified definitions / descriptions are adopted appropriately for various terms and abbreviations used in these academic regulations/ norms, which are listed below.

3.2.1 Semester Scheme:

M.Tech. (Regular) Programme is of 2 academic years (4 semesters) with the each academic year being divided into two semesters. Each Semester shall be of 22 weeks duration (inclusive of Examinations), with a minimum of 90 instructional days per Semester and shall have 'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)', Choice Based Credit System (CBCS) and Credit Based Semester

System (CBSS) as indicated by UGC and curriculum/course structure as suggested by AICTE / JNTUH. The terms 'SUBJECT' and 'COURSE' imply the same meaning here and refer to 'Theory Subject', or 'Lab Course', or 'Design / Drawing Subject', or 'Mini Project with Seminar', or 'Dissertation', as the case may be.

3.2.2 Credit Courses:

All subjects/courses are to be registered by a student in a semester to earn credits. Credits shall be assigned to each subject/course in a L: T: P: C (Lecture Periods: Tutorial Periods: Practical Periods: Credits) structure, based on the following general pattern.

Theory		Practical	
1 Hr. Lecture (L) per week	1 Credit	1 Hour Practical (P) per week	0.5 Credit
1 Hr. Tutorial (T) per week	1 Credit	2 Hours Practical (Lab) per week	1.0 Credit

All Mandatory Courses, Study Tour, Guest Lecture, etc., will not carry any Credits.

3.2.3 Subject/ Course Classification:

The College has followed the guidelines issued by AICTE/UGC. All Subjects/Courses offered for the PGP in E&T are broadly classified as Program Core, Program Elective, Open Elective, Audit Course, Minor Course and Mini Project with Seminar, Industrial Training and Dissertation.

3.2.4 Course Nomenclature:

The Curriculum Nomenclature or Course - Structure Grouping for the M.Tech. Degree Programmes is as listed below:

S. No.	Broad Course Classification	Course Group/ Category	Courses Description
1	Core Courses(CoC)	PC- Program Core	Includes core subjects related to the Parent Discipline/ Department/ Branch of Engineering.
		Dissertation	M.Tech. Project or PG Project or PG Major Project
		Mini Project with Seminar	Seminar based on core contents related to parent discipline/ department/ branch of Engineering
		Minor Courses	1 or 2 Credit courses
		Audit Courses	Mandatory courses (non credit)

2	Elective Courses (EIC)	PE- Program Electives	Includes Elective subjects related to the Parent Discipline/ Department/ Branch of Engineering.
		OE- Open Electives	Elective subjects which include interdisciplinary subjects in an area outside the parent discipline/ department/ branch of Engineering.

* Students are encouraged to go to Industrial Training/Internship for at least 4 - 6 weeks during semester break.

4. COURSE REGISTRATION

- 4.1 A 'Faculty Advisor or Counselor' shall be assigned to each student, who advises the student about the M.Tech. Programme, its course structure and curriculum, choice / option for subjects / courses, based on his/her competence, progress, pre-requisites and interest of the students.
- 4.2 A Student may be permitted to Register for Subjects / Courses of 'his/her CHOICE' with a typical total of 18 Credits per Semester in I Year (Minimum being 15 Credits and Maximum being 21 Credits, permitted deviation being $\pm 15\%$), and 16 Credits (inclusive of Project) per III Semester in II Year (Minimum being 14 Credits and Maximum being 21 Credits), 16 credits (inclusive of Project) per IV Semester in II Year (minimum being 16 Credits and maximum 21 Credits), based on his interest, competence, progress, and 'Pre- Requisites' as indicated for various Subjects/ Courses, in the Department Course Structure (for the relevant Specialization) and Syllabus contents for various Subjects/ Courses.
- 4.3 Choice for 'additional Subjects / Courses' in any Semester (above the typical 18/16 Credit norm, and within the Maximum Permissible Limit of 21/21 Credits, during I/ II Years as applicable) must be clearly indicated in the Registration, which needs the specific approval and signature of the Faculty Advisor/ Counselor on hard-copy.
- 4.4 Dropping of Subjects/ Courses in any Semester of I Year may be permitted, ONLY AFTER obtaining prior approval and signature from the Faculty Advisor (subject to retaining a minimum of 15 Credits), 'within 15 Days of Time' from the beginning of the current Semester.
- 4.5 **Core Electives:** Students have to choose five core electives as per the course structure.

4.6 **Open Electives:** Students have to choose open elective other than parent department as per the course structure.

4.7 **Project work registration:** The Project shall start immediately after the completion of I year II semester. Every Student must compulsorily register for his/her M.Tech. Project Work. The student registered for the Project work shall work for two semesters.

5. ATTENDANCE REQUIREMENTS

The programmes are offered based on a unit system with each subject being considered a unit. Attendance is calculated separately for each subject.

5.1 Attendance in all classes (Lectures / Laboratories) is compulsory. The minimum required attendance in each theory subject (also mandatory (audit) courses) excluding the attendance of mid-term examination is 75%. A student shall not be permitted to appear for the Semester End Examinations (SEE), if his attendance is less than 75%.

5.2 A student's Seminar report and presentation on Mini Project shall be eligible for evaluation, only if he ensures a minimum of 75% of his attendance in Seminar presentation classes on Mini Project during that Semester.

5.3 Condoning of shortage of attendance (between 65% and 75%) up to a maximum of 10% (considering the days of attendance in sports, games, NCC, NSS activities and Medical grounds) in each subject (Theory / Lab / Mini Project with Seminar) of a semester shall be granted by the College Academic Committee on genuine reasons.

5.4 A prescribed fee per subject shall be payable for condoning shortage of attendance after getting the approval of College Academic Committee for the same. The College Academic Committee shall maintain relevant documents along with the request from the student.

5.5 Shortage of Attendance below 65% in any subject shall in **no case be condoned**.

5.6 A Student, whose shortage of attendance is not condoned in any Subject(s) (Theory / Lab/ Mini Project with Seminar) in any Semester, is considered as 'Detained in that Subject(s), and is not eligible to write Semester End Examination(s) of such Subject(s), (in case of Mini Project with Seminar, his/her Mini Project with Seminar

Report or Presentation are not eligible for evaluation) in that Semester; and he/she has to seek re- registration for those Subject(s) in subsequent Semesters, and attend the same as and when offered.

5.7 A student fulfills the attendance requirement in the present semester, shall not be eligible for readmission into the same class.

5.8 (a) A student shall put in a minimum required attendance in at least three theory subjects (excluding mandatory (audit) course) in first Year I semester for promotion to first Year II Semester.

(b) A student shall put in a minimum required attendance in at least three theory subjects (excluding mandatory (audit) course) in first Year II semester for promotion to second Year I Semester.

6. ACADEMIC REQUIREMENTS

The following academic requirements have to be satisfied, in addition to the attendance requirements mentioned in item no. 5.

6.1 A Student shall be deemed to have satisfied the Academic Requirements and earned the Credits allotted to each Subject/ Course, if he secures not less than 40% Marks (28 out of 70 Marks) in the End Semester Examination, and a minimum of 50% of Marks in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of Letter Grades, this implies securing B Grade or above in that Subject.

6.2 A Student shall be deemed to have satisfied the academic requirements and earned the Credits allotted to - Mini Project with Seminar, if student secures not less than 50% of the total Marks to be awarded. The Student would be treated as failed, if the student - does not present the Mini Project with Seminar as required, or

(i) Secures less than 50% of Marks (< 50 Marks) in Mini Project with Seminar.

6.3 A Student shall - register for all Subjects covering 68 Credits as specified and listed in the Course Structure for the chosen PGP Specialization, put up all the Attendance and Academic requirements for securing 68 Credits obtaining a minimum of B Grade or above in each Subject and 'earn all 68 Credits securing Semester Grade Point Average (SGPA) ≥ 6.0 (in each Semester) and final Cumulative Grade Point Average (CGPA) (i.e.,

CGPA at the end of PGP) ≥ 6.0 , to successfully complete the PGP.

Note: (1) The SGPA will be computed and printed on the marks memo only if the student passes in all the subjects offered and gets minimum B grade in all the subjects.

(2) CGPA is calculated only when the student passes in all the subjects offered in all the semesters.

6.4 Marks and Letter Grades obtained in all those Subjects covering the above specified 68 Credits alone shall be considered for the calculation of final CGPA, which shall be indicated in the Grade Card / Marks Memo of II Year II Semester.

6.5 If a student registers for some more 'extra Subjects' (in the parent Department or other Departments/Branches of Engineering.) other than those listed Subjects totaling to 68 Credits as specified in the Course Structure, the performances in those 'extra Subjects' (although evaluated and graded using the same procedure as that of the required 68 Credits) will not be taken into account while calculating the SGPA and CGPA. For such 'extra Subjects' registered, % marks and Letter Grade alone will be indicated in the Grade Card, as a performance measure, subject to completion of the Attendance and Academic Requirements as stated in Items 5 and 6.1 – 6.4 above.

6.6 Students who fail to earn 68 Credits as per the specified Course Structure, and as indicated above, within 4 Academic Years from the date of Commencement of their I Year, shall forfeit their seats in M.Tech. Programme and their admissions shall stand cancelled.

6.7 When a student is detained due to shortage of attendance in any subject(s)/seminar in any semester, no Grade Allotment will be done for such Subject(s)/Seminar, and SGPA/ CGPA calculations of that Semester will not include the performance evaluations of such subject(s)/seminar in which he got detained. However, he becomes eligible for re-registration of such subject(s)/seminar (in which he got detained) in the subsequent Semester(s), as and when next offered, with the Academic Regulations of the Batch into which he gets readmitted, by paying the stipulated fees per subject. In all these re-registration cases, the student shall have to secure a fresh set of Internal Marks (CIE) and Semester End Examination Marks (SEE) for performance evaluation in such subject(s), and subsequent SGPA/ CGPA calculations.

- 6.8 A student eligible to appear in the Semester End Examination (SEE) in any subject, but absent at it or failed (failing to secure B Grade or above), may reappear for that subject at the supplementary examination (SEE) as and when conducted. In such cases, his Internal Marks (CIE) assessed earlier for that Subject/ Course will be carried over, and added to the marks to be obtained in the supplementary examination (SEE), for evaluating his performance in that Subject.

7. EVALUATION - DISTRIBUTION AND WEIGHTAGE OF MARKS

- 7.1 The performance of a student in each semester shall be evaluated subject- wise (Irrespective of credits assigned) for a maximum of 100 marks.
- 7.2. For the theory subjects 70 marks shall be awarded for the performance in the Semester End Examination and 30 marks shall be awarded for Continuous Internal Evaluation (CIE), there shall be two mid-term examinations conducted. The first mid-term examination shall be conducted for the first 50% of the syllabus, and the second mid-term examination shall be conducted for the remaining 50% of the syllabus. Each Mid-Term Examination shall be conducted for a total duration of 120 minutes with Part 'A' as compulsory consisting of 6 questions carrying 2 marks each (12 marks), and Part 'B' with 3 questions to be answered out of 5 questions, each question carrying 6 marks (18 marks). The total marks secured by the student in each mid-term examination are evaluated for 30 marks, final marks secured by each student in Continuous Internal Evaluation = (70% of the better scored marks of MID-I / MID-II) + (30% of less scored marks of MID-I / MID-II).

Ex: A student secured following marks

MID-I marks = 10 out of 30

MID-II marks = 20 out of 30

The MID marks awarded will be = (70% of 20) + (30% of 10) = 14 + 3 =17

- 7.2.1 There shall be an optional third midterm examination; students who are failed to attend any mid examination only register for third mid examination by paying prescribed registration fee, which covers entire semester syllabus carrying 30 marks. Optional third mid-term examination consists of descriptive paper shall be for 30 marks with a duration of 120 minutes. The paper shall contain 5 questions the student has to answer all questions, each carrying 6 marks.

7.2.2 For evaluation of final internal marks = (70% of the better scored marks of MID-I / MID-II/MID-III) + (30% of less scored marks of MID-I / MID-II/MID-III).

7.2.3 The details of the Question Paper pattern for Semester End Examination (Theory) are given below:

The Semester End Examination will be conducted for 70 marks. It consists of two parts.

(i).Part A for 20 marks, (ii). Part B for 50 marks.

Part-A is compulsory question (numbered with 1), which consists of five sub questions (one from each unit) carrying 4 marks each.

Part-B consists of five questions (number starts with 2) carrying 10 marks each. Each of the question, there will be an either or choice (i.e., there will be two questions from each unit and student will answer any one of the question of their own choice)

7.3 For Practical Subjects, there shall be a Continuous Internal Evaluation (CIE) during the Semester for 30 Internal Marks, and 70 Marks are assigned for Lab/Practical's Semester End Examination (SEE). Out of the 30 Marks for Internals, day-to-day work assessment in the laboratory shall be evaluated for 20 Marks; and the performance in an internal Lab/Practical Test shall be evaluated for 10 marks. The SEE for Lab / Practical's shall be conducted at the end of the Semester by the concerned Lab teacher and external examiner appointed by the Head of the Institution.

7.4 For mandatory (audit) courses, a student has to secure 50 marks out of 100 marks (i.e. 50% of the marks allotted) in the continuous internal evaluation for passing the subject/course. No marks or letter grades shall be allotted for mandatory (audit) courses. Only Pass/Fail shall be indicated in Grade Card.

7.5 There shall be a Mini Project with Seminar presentation in I Year II Semester for 100 marks, for which the student shall collect the information on a specialized topic, prepare a Mini Project Report and submit to the department. The Continuous Internal Evaluation (CIE) of 30 Marks evaluated by the guide / supervisor and Semester End Examination (SEE) of 70 marks evaluated by the committee. The evaluation committee consisting of Head of the Department, Mini Project Guide and senior faculty as appointed by Head of the Department.

7.6 Guidelines for Project Work Evaluation:

- a) The Project shall start immediately after the completion of I year II semester. Every Student must register for his M.Tech. Project Work, within the 4 weeks after the completion of I year II Semester. The student registered for the Project work shall work for two semesters. After Registration and in consultation with the guide, the Student has to present the title, objective and plan of action of his project work to the Project Review Committee (PRC) for approval within 6 weeks after the completion of I year II Semester. Only after obtaining the approval of the PRC, the student can initiate the Project work.
- b) A Project Review Committee (PRC) shall be constituted by Head of the Department and shall consist of the Head of the Department (Chairperson), Project Guide and one senior faculty member of the Department.
- c) If a student wishes to change his Guide or topic of the project, he can do so with the approval of the PRC. However, the PRC shall examine whether or not the change of topic/Guide leads to a major change of his initial plans of project proposal. If yes, his date of registration for the project work starts from the date of change of Guide or topic as the case may be.

7.7 Monitoring of Project work progress by PRC

- i. The PRC will monitor the progress of the Project Work of the student. Project work Review-I will be held at the end of the III Semester (II Year I Semester) and Project work Review- II will be held at the end of the IV Semester (II year II Semester) before the submission of Project Report/ Dissertation.

The Project Work Review-I: There shall be a Dissertation-I/Industrial Project-I during the III Semester (II Year I Semester). The Dissertation-I/Industrial Project-I shall be evaluated by the project review committee consisting of Head of the Department, Project Guide and senior faculty as appointed by Head of the Department for 70 Marks (which will be considered as SEE). The student has to get a minimum of 40% marks (28 marks out of 70 marks) for successful completion. Project guide shall evaluate for 30marks (which will be considered as CIE).The student has to secure a minimum of 50 marks (CIE + SEE) out of 100 marks to be declared successful. If the student fails to obtain the minimum marks, the student has to reappear for the Dissertation-I/Industrial Project-I

during the supplementary examinations. The student shall be permitted to register Dissertation-II/Industrial Project-II only after successful completion of Dissertation- I/Industrial Project-I.

- ii. **The Project Work Review-II:** There shall be a Dissertation-II/Industrial Project-II during the IV Semester (II Year II Semester). The Dissertation-II/Industrial Project-II shall be evaluated by the project review committee consisting of Head of the Department, Project Guide and senior faculty as appointed by Head of the Department for 70 Marks (which will be considered as SEE). The student has to get a minimum of 40% marks (28 marks out of 70 marks) for successful completion. Project guide shall evaluate for 30 marks (which will be considered as CIE). The student has to secure a minimum of 50 marks (CIE + SEE) out of 100 marks to be declared successful. If the student fails to obtain the minimum marks, the student has to reappear for the Dissertation-II/Industrial Project-II during the supplementary examinations.
- iii. The student has to submit a soft copy of the final consolidated report of Dissertation - I & II / Industrial Project – I & II to the Head of the Department for **plagiarism check**. The Head of the Department should carry out plagiarism check and submit the report to the Principal. The Dissertation will be accepted for submission, only if the similarity index is less than or equal to 30%. If the similarity index has more than the required percentage, the student is advised to modify accordingly and re-submit the soft copy of the Dissertation only after one month. Only after submission of a hard copy of final project report in 4 copies along with plagiarism report, the Dissertation- II / Industrial Project-II shall be evaluated by the project external viva-voce examination committee. The maximum number of re-submissions of Dissertation after plagiarism check is limited to TWO.
- iv. The candidate has to register for the project work for two semesters (not less than 44 weeks including registration and approval of Project-I and Project-II). After three attempts (including regular attempt), the admission is liable to be cancelled. The authorities are advised to make plagiarism check of every soft copy of theses before submissions.
- v. The Student shall be allowed to submit his Project Dissertation, only on the successful completion of all the prescribed PG Subjects (Theory and Practical's.),

Mini Project with Seminar, etc. (securing B Grade or above), and after obtaining all approvals from PRC.

- vi. Three copies of the Dissertation Thesis certified by the supervisor shall be submitted to the College/Institute, after submission of a research paper related to the Dissertation work in a reputed journal / conference. A copy of the submitted researchpaper shall be attached to thesis.
- vii. The Dissertation of the student will be evaluated by the committee along with external examiner (appointed by the Head of the Institution) based on his/her presentation followed by viva-voce examination.
- viii. If the report of the committee is unsatisfactory, the student shall revise and resubmit the project after ONE semester, or as per the time specified by the committee. If the resubmitted report is also unsatisfactory, then the Dissertation shall be rejected summarily. No further correspondence in this matter will be entertained, if there is no specific recommendation for resubmission by the committee.
- ix. If the student's oral presentation is not satisfactory, the committee may defer it and the student has to re-appear for the oral presentation before the same committee for the award of degree.
- x. The Committee should submit Project External examination marks to the Head of the Institution on the day of the examination.

8. RE-ADMISSION / RE-REGISTRATION:

- 8.1 Re-Admission for Discontinued Students: Students, who have discontinued the M.Tech. Degree Programme due to any reasons whatsoever, may be considered for 'Readmission' into the same Degree Programme (with same specialization) with the Academic Regulations of the Batch into which he gets Re-admitted, with prior permission from the concerned authorities, subject to Item 3.1.
- 8.2 Re-Registration for Detained Students: When any Student is detained in a Subject (Theory /Practical / Seminar etc.) due to shortage of attendance in any Semester, he may be permitted to re-register for the same Subject in the 'same category' (Core or Elective Group) or equivalent Subject if the same Subject is not available, as suggested by the Board of Studies of that Department, as when offered in the sub-sequent

Semester(s), with the Academic Regulations of the Batch into which he seeks re-registration, with prior permission from the concerned authorities, subject to Item 3.1.

9. GRADING PROCEDURE:

9.1 Marks will be awarded to indicate the performance of each student in each Theory Subject, or Practical, or Mini Project with Seminar, Project, etc., based on the % marks obtained in CIE + SEE (Continuous Internal Evaluation + Semester End Examination, both taken together) as specified in Item 6 above, and a corresponding Letter Grade shall be given.

9.2 As a measure of the student's performance, a 10-point Absolute Grading System using the following Letter Grades (UGC Guidelines) and corresponding percentage of marks shall be followed:

% of Marks Secured (Class Intervals)	Letter Grade	Grade Points
90% and above	O (Outstanding)	10
Below 90% but not less than 80%	A ⁺ (Excellent)	9
Below 80% but not less than 70%	A (Very Good)	8
Below 70% but not less than 60%	B ⁺ (Good)	7
Below 60% but not less than 50%	B (Above Average)	6
Below 50% (< 50%)	F (Fail)	0
Absent	AB	0

9.3 A student obtaining F Grade in any Subject shall be considered 'failed' and is required to reappear as 'Supplementary Student' in the Semester End Examination (SEE), as and when conducted. In such cases, his/her Internal Marks (CIE Marks) in those Subjects will remain the same as those he obtained earlier.

9.4 If a student does not appear for the examinations, 'Absent' Grade will be allocated to them for any subject and shall be considered 'failed' and will be required to reappear as 'Supplementary Student' for the Semester End Examination (SEE), when conducted.

9.5 A Letter Grade does not imply any specific % of marks.

9.6 In general, a student shall not be permitted to repeat any subject / course (s) only for the sake of 'Grade Improvement' or 'SGPA/CGPA Improvement'.

- 9.7 A student earns grade point (GP) in each subject/ course, on the basis of the letter grade secured in that subject/ course. The corresponding ‘credit points’ (CP) are computed by multiplying the grade point with credits for that particular subject/ course.

Credit points (CP) = grade point (GP) x credits For a course

- 9.8 A student passes the subject/ course only when **GP \geq 5 (‘C’ grade or above)**
- 9.9 The Semester Grade Point Average (SGPA) is calculated by dividing the sum of creditpoints (\sum CP) secured from all subjects/ courses registered in a semester, by the total number of credits registered during that semester. SGPA is rounded off to **two** decimalplaces. SGPA is thus computed as

$$\text{SGPA} = \{\sum_{i=1}^N C_i G_i\} / \{\sum_{i=1}^N C_i\} \dots \text{For each semester,}$$

where ‘i’ is the subject indicator index (takes into account all subjects in a semester), ‘N’ is the no. of subjects ‘**registered**’ for the semester (as specifically required and listed under the course structure of the parent department), C_i is the no. of credits allotted to the i^{th} subject, and G_i represents the grade points (GP) corresponding to the letter grade awarded for that i^{th} subject.

- 9.10 The Cumulative Grade Point Average (CGPA) is a measure of the overall cumulative performance of a student in all semesters considered for registration. The CGPA is theratio of the total credit points secured by a student in **all** registered courses in **all** semesters, and the total number of credits registered in **all** the semesters. CGPA is rounded off to **two** decimal places. CGPA is thus computed from the I year II semester onwards at the end of each semester as per the formula

$$\text{CGPA} = \{\sum_{j=1}^M C_j G_j\} / \{\sum_{j=1}^M C_j\} \dots \text{for all S semesters registered}$$

(i.e., up to and inclusive of S semesters, $S \geq 2$),

where ‘M’ is the **total** no. of subjects (as specifically required and listed under the course structure of the parent department) the student has ‘**registered**’ i.e., from the 1st semester onwards up to and inclusive of the 4th semester, ‘j’ is the subject indicator index (takes into account all subjects from 1 to 4 semesters), C_j is the no. of credits allotted to the j^{th} subject, and G_j represents the grade points (GP) corresponding to the letter grade awarded for that j^{th} subject. After registration and completion of I year I semester, the SGPA of that semester itself may be taken as the CGPA, as there are no cumulative effects.

Illustration of calculation of SGPA:

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
Course 1	4	A	8	4 x 8 = 32
Course 2	4	O	10	4 x 10 = 40
Course 3	4	C	5	4 x 5 = 20
Course 4	3	B	6	3 x 6 = 18
Course 5	3	A+	9	3 x 9 = 27
Course 6	3	C	5	3 x 5 = 15
	21			152

$$\text{SGPA} = 152/21 = 7.24$$

Illustration of calculation of CGPA up to 3rd semester:

Semester	Course/Subject Title	Credits Allotted	Letter Grade Secured	Corresponding Grade Point (GP)	Credit Points (CP)
I	Course 1	3	A	8	24
I	Course 2	3	O	10	30
I	Course 3	3	B	6	18
I	Course 4	4	A	8	32
I	Course 5	3	A+	9	27
I	Course 6	4	C	5	20
II	Course 7	4	B	6	24
II	Course 8	4	A	8	32
II	Course 9	3	C	5	15
II	Course 10	3	O	10	30
II	Course 11	3	B+	7	21
II	Course 12	4	B	6	24
II	Course 13	4	A	8	32
II	Course 14	3	O	10	30
III	Course 15	2	A	8	16
III	Course 16	1	C	5	5
III	Course 17	4	O	10	40
III	Course 18	3	B+	7	21
III	Course 19	4	B	6	24
III	Course 20	4	A	8	32
III	Course 21	3	B+	7	21
	Total Credits	69		Total Credit Points	518

$$\text{CGPA} = 518/69 = 7.51$$

The above illustrated calculation process of CGPA will be followed for each subsequent semester until 4th semester. The CGPA obtained at the end of 4th semester will become the final CGPA secured for entire M.Tech. Programme.

- 9.11 For merit ranking or comparison purposes or any other listing, **only** the ‘**rounded off**’ values of the CGPAs will be used.
- 9.12 SGPA and CGPA of a semester will be mentioned in the semester Memorandum of Grades if all subjects of that semester are passed in first attempt. Otherwise the SGPA and CGPA shall be mentioned only on the Memorandum of Grades in which sitting he passed his/her last exam in that semester. However, mandatory courses will not be taken into consideration.
- 9.13 For calculations listed in item 9.7 to 9.12, performance in failed subjects/courses (securing ‘F’ grade) will also be taken into account, and the credits of such subjects/courses will also be included in the multiplications and summations.

10. DECLARATION OF RESULTS

10.1 Computation of SGPA and CGPA are done using the procedure in item Nos. 9.6 to 9.11.

10.2 For final percentage of marks equivalent to the computed final CGPA, the following Formula may be used:

$$\text{Percentage of Marks} = (\text{final CGPA} - 0.5) \times 10$$

11. AWARD OF DEGREE

11.1 After a student has satisfied the requirement prescribed for the completion of the Program and is eligible for the award of M.Tech. Degree he shall be placed in one of the following Three classes based on CGPA:

Class Awarded	CGPA	Remarks
First Class with Distinction	≥ 7.75	From the aggregate marks secured from 68 credits for regular students
First Class	$6.75 \leq \text{CGPA} < 7.75$	
Second Class	$6.00 \leq \text{CGPA} < 6.75$	

A student with final CGPA (at the end of the **PGP**) < 6.00 shall not be eligible for the Award of Degree.

11.2 First Class with Distinction will be awarded to those students who clear all the subjects in single attempt during his/her regular course of study by fulfilling the following conditions:

11.2.1 Should have passed all the subjects/courses in 'first appearance' within the first 2 academic years (or 4 sequential semesters) for M.Tech.

11.2.2 Should have secured a CGPA ≥ 7.75 , at the end of each of the 4 sequential semesters.

11.2.3 Should not have been detained or prevented from writing the Semester End Examinations in any semester due to shortage of attendance or any other reason, shall be placed in 'First Class with Distinction'.

11.3 Award of Medals: Students fulfilling the conditions listed under item 11.2 alone will be eligible for award of 'College ranks' and 'Medals'.

- 11.4 Transcripts: After successful completion of prerequisite credits for the award of degree a transcript containing performance of all academic years will be issued as a final record. Duplicate transcripts will also be issued if required after the payment of requisite fee and also as per norms in vogue.

12. WITH HOLDING OF RESULTS

If the student has not paid the fee to college at any stage, or has dues pending against his/her name due to any reason what so ever, or if any case of indiscipline is pending against him/her, the result of the student may be withheld, and he/she will not be allowed to go into the next higher semester. The award or issue of the degree may also be withheld in suchcases.

13. SUPPLEMENTARY EXAMINATIONS

Supplementary examinations for odd semester subject(s) / course (s) shall be conducted along with even semester regular examinations and vice versa.

14. TRANSITORY REGULATIONS

A Student - who has discontinued for any reason, or who has been detained for want of attendance as specified, or who has failed after having undergone PGP, may be considered eligible for readmission to the same PGP with same set of Subjects/ Courses (or equivalent Subjects/ Courses as the case may be), and same Professional Electives (or from same set/category of Electives or equivalents as suggested), as and when they are offered (within the time-frame of 4 years from the Date of Commencement of his I Year I Semester).

15. STUDENT TRANSFERS

There shall be no transfers from other colleges/streams.

16 RULES OF DISCIPLINE

16.1 Any attempt by any student to influence the teachers, Examiners, faculty and staff of controller of Examination for undue favors in the exams, and bribing them either for marks or attendance will be treated as malpractice cases and the student can be debarred from the college.

16.2 When the student absents himself, he is treated as to have appeared and obtained zero marks in that subject(s) and grading is done accordingly.

16.3 When the performance of the student in any subject(s) is cancelled as a punishment for indiscipline, he is awarded zero marks in that subject(s).

16.4 When the student's answer book is confiscated for any kind of attempted or suspected malpractice the decision of the Examiner is final.

17. MALPRACTICE

17.1 Malpractice Prevention Committee: The committee shall examine the student's malpractice and indiscipline cases occurred, while conducting the examinations and recommend appropriate punishment to the Examination Results Processing Committee(ERPC) after taking explanation from the student and concerned invigilator as per the malpractice rules mentioned below. The committee consists of

- a) Controller of Examinations - Chairman
- b) Addl. Controller of Examinations.- Convener
- c) Subject Expert - Member
- d) Head of the Department of which the student belongs to - Member
- e) The Invigilator concerned - Member

17.2 Malpractice Rules: Disciplinary action for improper conduct in examinations

S. No.	Nature of Malpractices / Improper Conduct	Punishment
1(a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.
1(b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or Persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2	Has copied in the examination hall from any paper, book, programmable calculators,	Expulsion from the examination hall and cancellation of the performance in that

	palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing.	subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that Semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the Principal.
3	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate who has been impersonated, shall be cancelled in all the subjects of the examination (including practical's and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester / year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4	Smuggles in the Answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.

5	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6	Refuses to obey the orders of the Addl. Controller of examinations / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the addl. Controller of examinations or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the addl. Controller of examinations, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.
7	Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.

8	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.
9	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester / year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester/year examinations.
12	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the ERPC for further action to award suitable punishment.	

18. SCOPE

- I. The academic regulations should be read as a whole, for the purpose of any interpretation.
- II. The above mentioned rules and regulations are applicable in general to M.Tech., unless and otherwise specific.
- III. In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Chairman of the Academic Council is final.

19. REVISION AND AMENDMENTS TO REGULATIONS

The Academic Council may revise or amend the academic regulations, course structure or syllabi at any time, and the changes or amendments made shall be applicable to all students with effect from the dates notified by the Academic Council Authorities.