

W.E.F. 2023-24

M.Tech-23

ACADEMIC REGULATIONS

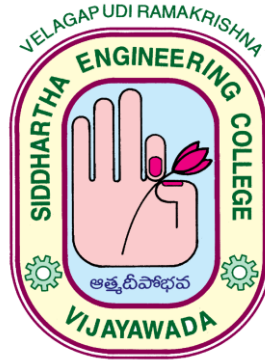
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SYLLABUS

MASTER OF TECHNOLOGY

(M.Tech-23) w. e. f: 2023-24

(Automated Manufacturing Systems)



VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE

(An Autonomous, ISO 21001:2018 Certified Institution)

(Approved by AICTE, Accredited by NAAC with 'A+' Grade, Affiliated to JNTUK, Kakinada)

(Sponsored by Siddhartha Academy of General & Technical Education)

Kanuru, Vijayawada

Andhra Pradesh - 520007, INDIA.

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VELAGAPUDI RAMAKRISHNA
SIDDHARTHA ENGINEERING COLLEGE

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Kanuru, Vijayawada – 520 007

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(Affiliated to Jawaharlal Nehru Technological University, Kakinada)

Academic Regulations for M. Tech (M.Tech.-23) w.e.f: 2023-2024

(Common to all branches)

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1. INTRODUCTION

Academic Programs of the College are governed by rules and regulations as approved by the Academic Council, which is the highest Academic Body of the Institute. These academic rules and regulations are effective from the academic year 2023-24 for students admitted into the two-year PG program the college offers, leading to a Master of Technology (M. Tech).

The regulations listed under this head are common for postgraduate programs, leading to the award of an M. Tech degree offered by the college with effect from the academic year 2023-24. They are called “M.TECH-23” regulations.

The regulations hereunder are subjected to amendments as may be made by the Academic Council of the college from time to time, keeping the recommendations of the Board of Studies in view. Any or all such amendments will be effective from such date and to such batches of candidates, including those already undergoing the program, as may be decided by the Academic Council.

2. DEFINITIONS

- a) “Commission” means University Grants Commission (UGC)
- b) “Council” means All India Council for Technical Education (AICTE)
- c) “University” means Jawaharlal Nehru Technological University Kakinada, Kakinada (JNTUK)
- d) “College” means Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC)
- e) “Course” means a subject, either theory or practical, identified by its course title and code number, normally studied in a semester.
- f) “Program” means any combination of courses and/or requirements leading to the award of a degree
- g) “Degree” means an academic degree conferred by the university upon those who complete the postgraduate curriculum.

3. PROGRAMS OFFERED

The nomenclature and its abbreviation given below shall continue to be used for the degree programs under the University, as required by the Council and Commission.

Master of Technology (M. Tech), besides, the name of the program shall be indicated in brackets after the abbreviation. For example, a PG engineering degree in Structural Engineering is abbreviated as M. Tech (Structural Engineering).

Presently, the college is offering Post Graduate program in Engineering with the following programs:

Table 1: List of Programs offered by college leading to M. Tech Degree

S. No	Program	Department
1	Structural Engineering	Civil Engineering
2	Computer Science and Engineering	Computer Science and Engineering
3	VLSI Design and Embedded Systems	Electronics and Communication Engineering
4	Data Science	Information Technology
5	Automated Manufacturing Systems	Mechanical Engineering

These Regulations shall apply to any new postgraduate program (M.Tech) that may be introduced from now onwards.

4. DURATION OF THE PROGRAM

- The duration of the program is two academic years consisting of four semesters.
- A student is permitted to complete the program within a maximum duration of 4 years.

5. MINIMUM INSTRUCTION DAYS

- Each semester shall consist of a minimum of 90 instruction days with about 25 to 35 contact periods per week.

6. ELIGIBILITY CRITERIA FOR ADMISSION

- The eligibility criteria for admission into M. Tech program are as per the guidelines of the Andhra Pradesh State Council of Higher Education (APSCHE).

6.1 CATEGORY –A Seats:

- These seats will be filled by the Convener, PGE CET Admissions.

6.2 CATEGORY –B Seats :

- These seats will be filled by the College as per the guidelines of the Andhra Pradesh State Council of Higher Education (APSCHE).

7. PROGRAM STRUCTURE

The program structure is designed to facilitate the courses required to attain the expected knowledge, skills, and attitude by the time of their post-graduation as per the needs of the stakeholders. The curriculum structure consists of various course categories to cover the depth and breadth required for the program and for the attainment of program outcomes of the corresponding program. Each specialization of the M.Tech program is designed to have a total of 70 credits, and the student shall have to earn all the credits for the award of the degree.

Curriculum Structure for P.G. Programmes (M.Tech)

SEMESTER I

Contact Hours: 26

S.No	Course Type	Title/Type of the Course	L	T	P	C
1	Programme Core - I	Programme Core	2	0	2	3
2	Programme Core - II	Programme Core	3	0	0	3
3	Programme Core - III	Programme Core	3	0	0	3
4	Programme Elective - I	Programme Elective	3	0	0	3
5	Programme Elective - II	Programme Elective	3	0	0	3
6	Mandatory Learning Course	Research Methodology and IPR	2	0	0	0
7	Laboratory - I	Laboratory	0	0	3	1.5
8	Laboratory - II	Laboratory	0	0	3	1.5
9	Project	Capstone Project 1	0	0	2	1
Total			16	0	10	19

SEMESTER II

Contact Hours: 28

S.No	Course Type	Title/Type of the Course	L	T	P	C
1	Programme Core – IV	Programme Core	2	0	2	3
2	Programme Core – V	Programme Core	3	0	0	3
3	Programme Core – VI	Programme Core	3	0	0	3
4	Programme Elective – III	Programme Elective	3	0	0	3
5	Programme Elective – IV	Programme Elective	3	0	0	3
6	Audit Course	Technical Report Writing	2	0	0	-
7	Term Paper	Term Paper ²	2	0	0	1
8	Laboratory - I	Laboratory	0	0	3	1.5
9	Laboratory - II	Laboratory	0	0	3	1.5
10	Project	Capstone Project 2	0	0	2	1
Total			18	0	10	20

Semester III**Contact Hours:23**

S.No	Course Type	Title/Type of the Course	L	T	P	C
1	Programme Elective - V	Students to complete courses in any MOOCS Platform such as NPTEL	3	0	0	3
2	Project (Part-A)	Dissertation/ Industrial Project	0	0	20	10
3	Internship	Internship/Summer Training in Research Organizations/ Institutions of Higher Learning (After II Sem)	0	0	0	2
Total			3	0	20	15

Semester IV**Contact Hours:32**

S.No	Course Type	Title/Type of the Course	L	T	P	C
1	Project (Part-B)	Dissertation/ Industrial Project	0	0	32	16
Total			0	0	32	16

Semester	Credits
1	19
2	20
3	15
4	16
Total	70

L – Lecture, T – Tutorial, P – Practical, C – Credits**Note:**

1. A student has to carry out a project applying the knowledge and hands-on technical skills they have gained through coursework and lab sessions in **Semester-I** under **Capstone Project 1**
2. Student should carryout literature survey of the selected problem and present it in a Seminar for the yearlong Project Work under Term Paper.
3. Students should carry out a project applying the knowledge and hands-on technical skills they have gained through coursework and lab sessions in **Semester-II** under **Capstone Project 2**
4. At least one theory course in the I & II semesters can be made as an integrated course (Theory coupled with Laboratory).
5. A Maximum of three theory courses (40% of courses) can be offered as self-learning courses in each of the First and Second semesters.

7.1 Program Core:

The core consists of a set of courses considered necessary for the students of the specific program. The credits for program core courses are 18.

7.2 Program Electives:

The electives are a set of courses offered that cover depth and breadth to further strengthen their knowledge. The students may register for appropriate electives offered based on their area of interest. The credits for the program electives are 12.

7.3 Self-Learning Course: Program Elective V and other courses offered in Semesters I and II

The courses under this category shall carry three credits and must have a minimum duration of 12 weeks/36 hours. The department will recommend self-learning courses from the available open courseware. The self-learning courses shall be taken from the list of approved MOOCs providers (NPTEL/ EDx / Others). They must be approved/ratified in the respective Board of Studies. Students have the option of completing program elective V in either semester I or II, provided that they meet the prerequisites. Students can register and complete the opted course in the approved MOOCs platform and submit the pass certificate on or before the announcement of respective end-semester examination results.

In case a student fails to complete the MOOCs course offered by MOOCs providers, he/she may be allowed to register again in the subsequent semester for the same course.

The students are permitted to submit the pass certificates of the NPTEL courses (MOOCs) on or before the last instruction day of the academic calendar of subsequent semesters.

As soon as they submit pass certificate of MOOCs courses of 3rd semester by the end of 4th semester, they are permitted to appear for project work vivs - voce examinations , if they fulfill the other academic regulatrions in force.

The supplementary examinations will be conducted with NPTEL syllabus by the college for the subjects in which candidates appeared and failed in MOOCs (NPTEL) platform in the M Tech IV semester and the results will be declared before the commencement of the Project Viva – Voce examination.

The student failing to pass in the MOOCs courses in the first attempt and pass later as supplementary candidate, may also be awarded “Distinction” akin to other students who pass all the courses at first attempt and fulfill the required conditions for the award of “Distinction” .

The credits for the program elective V are 3

7.4 Mandatory learning Course (Research Methodology and IPR):

The students shall undergo this mandatory learning course and achieve satisfactory performance. No credits for this course.

7.5 Audit Course (Technical Report Writing):

The students shall enroll in a technical report writing course as an audit course for the purpose of self-enrichment and academic exploration. No credits for this course.

7.6 Term Paper:

There shall be seminar presentations during I year II semester. For seminar, a student shall collect the literature on the advanced topic in relevant fields related to yearlong project to be taken up in semesters III & IV and critically review the literature and submit it to the department in a form of report and shall make an oral presentation before the Academic Committee consisting of program coordinator, guide and two other senior faculty members of the department. The credits for the Term paper are 1

7.7 Capstone Projects 1 &2:

A Student has to carry out a project applying the knowledge and hands-on technical skills they have gained through course work and lab sessions in **Semester-I&II** under **Capstone Project 1 & 2, respectively**. Each Capstone Project carries one credit.

7.8 Internship:

The students shall undergo an Internship for a period of six weeks in an Industry/Research organization/institute of higher learning approved by the Head of the Department at any time after the second semester and shall earn two credits. The credits for the Internship are 2

7.9 Project:

The Project shall be offered in 2nd year of the program. The project shall be carried out by the students, as an individual project, for a minimum period of one academic year. The project shall be carried out in the major areas pertaining to the program approved by Project Review Committee and may address the societal problems/issues related to the program. The project shall consist of Part-A and Part-B carrying 10 and 16 credits, respectively, spreading over one semester each. Project part B shall be the extension of project Part A.

- If the candidate wishes to change his/her topic of the project, he/she can do so with the approval of the project review committee within one week from the completion of 1st review.

PROJECT WORK IN COLLABORATION WITH INDUSTRY:

- A student may, with the approval of the Head of the Department/Centre, visit an industry or a Research Laboratory for data collection, discussion of the project, experimental work, survey, field studies, etc., during the project period. Projects

sponsored by the industry or Research Laboratories will be encouraged, and a close liaison with such organizations will be maintained.

- A student may, with the approval of the Project Review Committee, do the project work in collaboration with an industry, a Research and Development Organization. The student shall acknowledge the involvement and/or contribution of an industry or R&D organization in completing the project in his/her thesis, and a certificate to this effect, issued by the supervisor from the industrial organization, will be included in the thesis.

7.10 Course Code and Course Numbering Scheme

Course Code consists of ten characters in which the first two are numerals, the next four are alphabets and the rest are numerals. The third to sixth characters are described in Tables 2 and 3.

Table 2: Third - and Fourth-Character Description

Characters	Name of the Department
CE	Civil Engineering Department
CS	Computer Science and Engineering Department
EC	Electronics & Communication Engineering Department
IT	Information Technology Department
ME	Mechanical Engineering Department

The third and fourth character represents specialization offering as mentioned in Table No. 3.

Table 3: Fifth- and Sixth-Character Description

Next Two	Name of the Specialization
SE	Structural Engineering
CS	Computer Science and Engineering
VE	VLSI Design and Embedded Systems
DS	Data Science
AM	Automated Manufacturing Systems

For all the Seventh and Eighth characters represent the semester numbers and syllabus version numbers of the course offered.

The Ninth character represents course type, as per Table No. 4

Table 4: Course type description

SEVENTH CHARACTER	DESCRIPTION
0	Program Core

1	Program Elective
2	Mandatory Course
3	Audit Course
4	Open Elective
5	Internship/ Laboratory
6	Term Paper/Capstone Project/Project

For example, in the **23CESE 1051** course, the first two digits indicate the year of regulation as the course is offered by Civil Engineering Department (**CE**) in Structural Engineering specialization (**SE**) offered in the first semester (**1**), the course syllabus version number (**0**), the course is of lab type (**5**) and the course number is (**1**), as given in the figure.1 below.

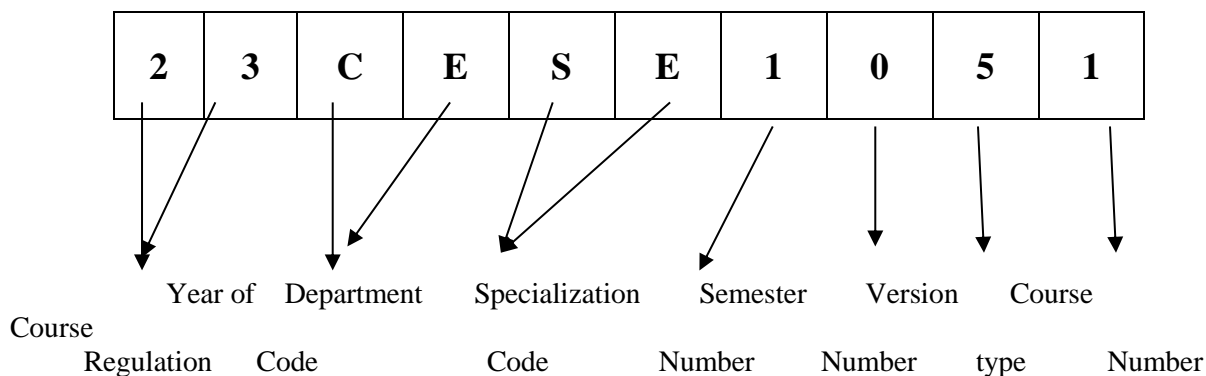


Figure 1: Course Code Description

7.11 Scheme of Instruction for 1st and 2nd Years

- The scheme of instruction and syllabus of all postgraduate programs are given separately.

7.12 Contact Hours and Credits

Credit means quantifying and recognizing learning. Credit is measured in terms of contact hours per week in a semester.

The Course Credits are broadly fixed based on the following norms:

- Lectures – One Lecture period per week is assigned one credit.
- Tutorials - One tutorial period per week is assigned one credit.
- Practical – 3 periods per week are assigned one and half credit
- Mandatory learning, audit course do not carry any credit
- Term paper shall have 01 credit.
- Capstone Project shall have 01 credit
- Internship shall have 02 credits.
- Project (Part A) shall have 10 credits.
- Project (Part B) shall have 16 credits.

7.13 Theory / Tutorial Classes

Each course is prescribed with a fixed number of lecture periods per week. During lecture periods, the course instructor shall deal with the concepts of the course. For certain courses, tutorial periods are prescribed to give exercises to the students and to closely monitor their learning ability.

7.14 Laboratory Courses

A minimum prescribed number of experiments have to be performed by the students, who shall complete these in all respects and get each experiment evaluated by the teacher concerned and certified by the Head of the Department concerned at the end of the semester.

7.15 Program Credits

Each specialization of the M.Tech program is designed to have a total of 70 credits, and the student shall have to earn all the credits for the award of degree.

8. MEDIUM OF INSTRUCTION

The medium of instruction and examination is English.

9. SYLLABUS

As approved by the concerned BOS and the Academic Council.

10. ELIGIBILITY REQUIREMENT FOR APPEARING IN SEMESTER-END EXAMINATION AND CONDONATION

- A regular course of study means a minimum average attendance of 75% in the semester computed by totaling the number of periods of lectures, tutorials, practical courses, and project as the case may be, held in every course as the denominator and the total number of periods attended by the student in all the courses put together as the numerator.
- Condonation of shortage in attendance may be recommended by the respective Heads of Departments on genuine medical grounds, provided the student puts in at least 65% attendance and provides the Principal is satisfied with the genuineness of the reasons and the conduct of the student.
- Students having a shortage of attendance shall have to pay the requisite fee towards condonation.
- A minimum of 50% aggregate marks must be secured by the candidates in the continuous evaluations conducted in that semester for courses such as theory, laboratory courses and project to be eligible to write semester end examinations. However, if the student is eligible for promotion based on attendance, in case necessary, a shortage of internal marks up to a

maximum of 10% may be condoned by the Principal based on the recommendations of the Heads of the Departments.

- Students having a shortage of internal marks up to a maximum of 10% shall have to pay requisite fee towards condonation.
- A student, who does not satisfy the attendance and/or internal marks requirement, shall have to repeat that semester.
- Eligible candidates who failed to register for all courses for the semester-end examinations shall not be permitted to continue the subsequent semester and has to repeat the semester for which he/she has not registered for semester end examinations.

11. EXAMINATIONS AND SCHEME OF EVALUATION

11.1 Continuous Evaluation:

11.1.1A Theory Courses

Each course is evaluated for **40** marks (a+b)

- a) The internal evaluation shall be made based on the two midterm examinations each of **25** marks will be conducted in every theory course in a semester. The midterm marks shall be awarded giving a weightage of $2/3^{\text{rd}}$ in the examination in which the student scores more marks and $1/3^{\text{rd}}$ for the examination in which the student scores less marks. Each midterm examination shall be conducted for a duration of 90 minutes without any choice.
- b) There shall be project-based assessment/assignments/seminars decided by the course handling faculty for 15 marks. A project-based assessment will apply multifaceted skills to be encompassed into a cumulative project. This can be a singular project at the end of a semester or it can be done at designated intervals throughout the semester. The intent is to design the project-based assessment to encompass the lesson plans, teacher worksheets and any additional teacher resources which will ultimately provide a physical example of what has been learned and what can be applied by the student. It shall measure the knowledge of the students in apply and above levels, in the cognitive learning domain as per the revised Bloom's taxonomy. The 15 marks shall be awarded as per the rubric prepared by the course handling faculty and shall be informed to the students well in advance before the evaluation.

11.1.1B Integrated Courses

- a) For integrated courses, the internal evaluation shall be made based on the two midterm examinations each of **25** marks will be conducted in a semester. The midterm marks shall be awarded giving a weightage of $2/3^{\text{rd}}$ in the examination in which the student scores more marks and $1/3^{\text{rd}}$ for the examination in which the student scores less marks. Each midterm examination shall be conducted for a duration of 90 minutes without any choice.

b) The laboratory part of the integrated course shall be assessed for 15 marks.

11.1.2 Laboratory Courses: 40 marks

- For Laboratory courses, there shall be continuous evaluation during the semester for 40 internal marks. The distribution of internal marks is given below:

Table 5: Distribution of Marks

Sl. No.	Criteria	Marks
1	Day to Day work	10
2	Record	10
3	Internal examination	20

11.1.3 Term Paper/Capstone Project / Internship: 40 marks

The distribution of internal marks for the Term Paper/Capstone Project is given below.

Table 6: Distribution of Marks

Sl. No.	Criteria	Marks
1	Presentation	15
2	Viva-voce	10
3	Report	15

11.1.4 Project: (40 marks)

The continuous evaluation (Project Part A and Project Part B) for 40 marks shall be on the basis of two seminars by each student on the topic of his/her project work and evaluated by a review committee and the day-to-day assessment by the supervisor in the respective semester. The review committee consists of the HOD, Program Coordinator, the respective internal guide and two senior faculty members of the department with expertise in the specialization nominated by the HOD. The distribution of marks is as follows in Table 7.

Table 7: Continuous internal assessment in each semester

Sl. No.	Criteria	Marks
1	Two reviews	15+15
2	Day to day assessment	10

Rubrics shall be prepared by review committee using appropriate performance indicators for each review separately and informed to the students well in advance.

11.1.5 Self-Learning Courses

No continuous evaluation for self-learning courses.

11.1.6 Mandatory Learning Course: 40 marks

One internal examination for 40 Marks will be conducted for **60 minutes** duration at the institutional level

The question paper shall be given in the following pattern: Part A: Contains '10' questions of one mark each. Part B: Contains 'Five' questions of ten Marks each out of which student shall answer three questions. The marks earned/attendance will not be considered for internal detention.

11.1.7 Audit Course:

However, a *student* must maintain more than 75% attendance to get a satisfactory grade in that particular audit course.

11.2 SEMESTER END EXAMINATIONS

11.2.1 Theory Courses: 60 marks

The Semester end examinations shall be conducted for 3 hours duration at the end of the semester. The question paper shall be given in the following pattern: There shall be two questions from each unit with internal choice. Each question carries 15 marks. Each course shall consist of four units of the syllabus.

11.2.2 Lab Courses: 60 marks

40 marks are allotted for experiments/job works & **20** marks are allotted for the viva-voce examination.

11.2.3 Term Paper/Capstone Project/Internship: 60 marks

Term Paper: There shall be a seminar presentation. For Seminar, a student under the supervision of a faculty member, shall collect the literature on a topic and critically review the literature and submit it to the Department in a report form and shall make an oral presentation before the Departmental Committee.

Capstone Project: For the capstone project, a student under the supervision of a faculty member, shall apply the knowledge and hands-on technical skills they have gained through course work and lab sessions in Capstone Project and submit it to the department in a report form and shall make an oral presentation before the Departmental Committee.

Internship: A student, under the supervision of a faculty member or industry executive, shall submit a report to the department and make an oral presentation before the departmental committee.

The Departmental Committee consists of the Program coordinator, supervisor and one to two other senior faculty members of the department. The evaluation is done for 60 marks internally based on a rubric prepared by the committee. A candidate has to secure a minimum of 50% to be declared successful.

11.2.4 Self-Learning Courses:

No semester-end evaluation for self-learning courses. In case a student fails to complete the MOOCs course offered by MOOCs providers, he/she may be allowed to register again in the subsequent semester for the same course.

The student must get at least 50% of marks to secure pass in MOOCs course

11.2.5 Project: 60 marks

Publication of the paper in Scopus indexed (or higher) journal or conference based on project work is mandatory for submission of the final thesis. Plagiarism check is mandatory with a maximum 35% plagiarism index before submission of the thesis. The project (Project Part A and Part B) shall be evaluated for 60 marks in respective semesters. The semester-end examination for project part – A shall be evaluated by Project Review Committee (PRC) as per 11.1.4 and project part – B shall be evaluated by a project evaluation committee consisting of the Head of the Department, project internal guide and an external examiner nominated by the Principal. The rubrics for evaluation of the semester end examination shall be defined by the Project review committee.

A candidate shall be permitted to submit his/her/Dissertation/ thesis only after acquiring credits of all theory , practical and project related courses including mandatory and audit courses.

Student entrepreneurs working on a startup idea during first year of the programme may be permitted to convert their start-up project as their final year project towards degree completion.

11.2.6 Mandatory learning Course: 60 marks

A **Mandatory learning Course** does not carry any credit. The semester-end Examination will be conducted for 60 Marks internally. The question paper pattern shall be the same as other theory courses.

Grades will be awarded as per Table 8 of 12.2.

The grades earned by the students from Mandatory Learning Courses will not be considered for the calculation of CGPA.

11.2.7 Audit Course:

No credit. No semester-end evaluation.

12. CONDITIONS FOR PASS AND AWARD OF CREDITS FOR A COURSE

12.1 Conditions for Pass and award of Grades & Credits:

- a) A candidate shall be declared to have passed in individual Theory course if he/she secures a minimum of 50% aggregate marks (Internal & semester-end examination marks put together), subject to a minimum of 40% marks in the semester-end examination.
- b) A candidate shall be declared to have passed an individual lab/course if he/she secures a minimum of 50% aggregate marks (Internal & semester-end examination marks put together), subject to a minimum of 50% marks in the semester-end examination.
- c) If a candidate secures a minimum of 40% marks in Theory Courses in the semester-end examination and 40% - 49% of the total marks in the semester-end examination and internal evaluation taken together in some theory courses and secures an overall aggregate of 50% in all theory courses in that semester he/she declared to be passed in the theory courses of that semester in regular Examinations. This provision is applicable for Regular candidates only during Regular Semester – end Examinations.
- d) The student has to pass the failed course by appearing in the examination when offered next, as per the requirement for the award of degree.
- e) A candidate shall be declared to have passed project part A/project part B, if he/she secures a minimum of 50 % aggregate marks (continuous evaluation and semester-end examination put together), subjected to a minimum of 50 % of marks in semester-end examinations.
- f) If any candidate does not fulfill the pass requirement as per 12.1.(e) in the semester end examination of Project Part – A, he / she will be given two months additional time to re-appear at the semester-end examination after paying the requisite examination fee. If the candidate does not fulfill the pass requirement again in Project Part – A as per 12.1(e), he/she has to repeat the semester in next academic year.
- g) In a special case, if any student does not submit his / her thesis of Project Part – B, due to ill health or any other reason, he / she will be given another chance to attend for Project, Viva – Voce examination conducted separately at a later date i.e. within two months from the completion of Project Part – B semester end examination of that particular academic year after paying the requisite examination fee, if the expenditure for conducting Project Part – B is completely borne by the candidate.
- h) On passing a course of a program, the student shall earn assigned credits in that

Course.

- i) Detained and break-in study candidates are not eligible for the award of First Class with Distinction
- j) The students who are approved for break in study for start-ups will be considered for award of first class with distinction

12.2 Method of Awarding Letter Grades and Grade Points for a Course.

A letter grade and grade points will be awarded to a student in each course based on his/her performance as per the grading system given below.

Table 8: Grading System for individual subjects/labs

Theory	Lab/Project	Grade Points	Letter Grade
90% and above	90% and above	10	Ex
80 to < 90%	80 to < 90%	9	A+
70 to < 80%	70 to < 80%	8	A
60 to < 70%	60 to < 70%	7	B
50 to < 60%	55 to < 60%	6	C
40 to < 50%	50 to < 55%	5	D
< 40%	< 50%	0	F (Fail)
ABSENT	ABSENT	0	AB

12.3 Calculation of Semester Grade Points Average (SGPA)* and award of division for the program.

The performance of each student at the end of each semester is indicated in terms of SGPA. The SGPA is calculated as below:

$$SGPA = \frac{\sum(CR \times GP)}{\sum CR} \quad (\text{For all courses passed in semester})$$

Where CR= Credits of a course

GP = Grade points awarded for a course

*SGPA is calculated for the candidates who passed all the courses in that semester.

12.4 Calculation of Cumulative Grade Point Average (CGPA) for Entire Program.

The CGPA is calculated as below:

$$CGPA = \frac{\sum(CR \times GP)}{\sum CR} \quad (\text{For the entire program})$$

Where CR= Credits of a course

GP = Grade points awarded for a course

Table 9: Award of Divisions

CGPA	DIVISION
≥ 7.75	*First Class with distinction
≥ 6.75	First Class
$\geq 5.75 - < 6.75$	Second Class
$\geq 5.0 - < 5.75$	Pass Class
< 5	Fail

For the purpose of awarding first class with distinction, the candidate should complete the program within 2 years and should get required CGPA.

Detained, Break in study candidates, and the candidates who availed themselves of the opportunity of extension of project part – A / part – B for a further period of two months are not eligible for the award of first class with distinction.

The cases of students who are absent for semester end examination only once in his/her duration of M.Tech Programme on valid medical grounds / humanitarian grounds may be considered for the award of First Class with Distinction subject to the recommendations of the committee constituted by the principal.

The student failing to pass in the MOOCs courses in the first attempt and pass later as supplementary candidate, may also be awarded “Distinction” akin to other students who pass all the courses at first attempt and fulfill the required conditions for the award of “Distinction”

For the purpose of awarding first/ second/ pass class, CGPA obtained in the examinations appeared within the maximum period allowed for the completion of course including extensions in the project, if any, shall be considered.

12.5 Transitory Regulations

A candidate who is detained or discontinued in the semester, on readmission shall be required to pass all the courses in the curriculum prescribed for such batch of students in which the student joins subsequently and the academic regulations be applicable to him/her which have in force at the time of his/her admission. However, the exemption will be given to those candidates who have already passed such courses in the earlier semester(s) and additional subjects are to be studied as approved by the Board of Studies and ratified by Academic Council.

12.6 Consolidated Grade Card

A consolidated grade card containing credits & grades obtained by the candidates will be issued after completion of the two years M. Tech Program.

13. READMISSION CRITERIA

A candidate, who is detained in a semester due to lack of attendance/marks, has to obtain written permission from the Principal for readmission into the same semester after duly fulfilling all the required norms stipulated by the college in addition to paying an administrative fee of Rs. 1,000/-

Rules for calculation of attendance for readmitted students.

- a) No. of classes conducted will be counted from the day 1 of the semester concerned, irrespective of the date of payment of tuition fee.
- b) They should submit a written request to the principal of the college, along with a challan paid towards tuition and other fee. for re – admission before the commencement of class work.
- c) Student should come to know about the date of commencement of class – work of the semester in to which he / she wishes to get re – admission. The information regarding date of commencement of class – work for each semester is available in the college notice boards / website.

14. BREAK IN STUDY

Student, who discontinues the studies for whatsoever may be the reason, can get readmission into an appropriate semester of M. Tech program after a break-in study only with the prior permission of the Principal of the College provided such candidate shall follow the transitory regulations applicable to such batch in which he/she joins. An administrative fee of Rs. 2000/- per each year of break in study in addition to the prescribed tuition and special fee has to be paid by the candidate to condone his/her break in study.

15. ELIGIBILITY FOR AWARD OF M.TECH. DEGREE

The M. Tech., Degree shall be conferred on a candidate who satisfies the following requirement. A student should register himself for 70 Credits, and should obtain all the 70 credits in order to become eligible for the award of M.Tech Degree.

16. CONDUCT AND DISCIPLINE

- Students shall conduct themselves within and outside the premises of the Institute in a manner befitting the students of our Institute.
- As per the order of the Honorable Supreme Court of India, ragging in any form is considered a criminal offense and is banned. Any form of ragging will be severely dealt with.
- The following acts of omission and/or commission shall constitute gross violation of the code of conduct and are liable to invoke disciplinary measures with regard to ragging.
 - i. Lack of courtesy and decorum; indecent behavior anywhere within or outside the campus.
 - ii. Willful damage or distribution of alcoholic drinks or any kind of narcotics to fellow students /citizens.

The following activities are not allowed within the campus

- Possession, consumption or distribution of alcoholic drinks or any kind of narcotics or hallucinogenic drugs.
- Mutilation or unauthorized possession of library books.
- Noisy and unseemly behavior, disturbing studies of fellow students.
- Hacking computer systems (such as entering into other person's areas without prior permission, manipulation and/or damage of computer hardware and software or any other cyber crime etc.
- Use cell phones in the campus.
- Plagiarism of any nature.
- Any other act of gross indiscipline as decided by the college from time to time.
- Commensurate with the gravity of an offense, the punishment may be reprimanded, fine, expulsion from the institute / hostel, debarment from a examination, disallowing the use of certain facilities of the Institute, rustication for a specified period or even outright expulsion from the Institute, or even handing over the case to appropriate law enforcement authorities or the judiciary, as required by the circumstances.
- For an offense committed in (i) a hostel (ii) a department or in a classroom and (iii) elsewhere, the Chief Warden, the Head of the Department and the Principal, respectively, shall have the authority to reprimand or impose fine.
- Cases of adoption of unfair means and/or any malpractice in an examination shall be reported to the Principal for taking appropriate action.
- Unauthorized collection of money in any form is strictly prohibited.
- Detained and Break-in-Study candidates are allowed into the campus for academic purposes only with permission from the authorities.
- Misconduct committed by a student outside the college campus, but having the effect of damaging, undermining & tarnishing the image & reputation of the institution will make the

student concerned liable for disciplinary action commensurate with the nature & gravity of such misconduct.

- The Disciplinary Action Committee constituted by the Principal, shall be the authority to investigate the details of the offense, and recommend disciplinary action based on the nature and extent of the offense committed.
- “Grievance appeal Committee” (General) constituted by the Principal shall deal with all grievances pertaining to the academic / administrative /disciplinary matters.
- All the students must abide by the code and conduct rules of the college.

17. MALPRACTICES

- The Principal shall refer the cases of malpractices in internal assessment tests and Semester-End Examinations, to a Malpractice Enquiry Committee, constituted by him/her for the purpose. Such committee shall follow the approved scales of punishment. The Principal shall take necessary action, against the erring students based on the recommendations of the committee.
- Any action on the part of the candidate at an examination trying to get undue advantage in the performance or trying to help another, or derive the same through unfair means is punishable according to the provisions contained hereunder. The involvement of the Staff, who are in charge of conducting examinations, valuing examination papers and preparing/keeping records of documents relating to the examinations in such acts (inclusive of providing incorrect or misleading information) that infringe upon the course of natural justice to one and all concerned at the examination shall be viewed seriously and recommended for award of appropriate punishment after thorough enquiry.

18. OTHER MATTERS

- The physically challenged candidates who have availed additional examination time and a scribe during their B. Tech/PGECET/GATE examinations will be given similar concessions on production of relevant proof/documents.
- Students who are suffering from contagious diseases are not allowed to appear either internal or semester end examinations.
- The students who participated in coaching/tournaments held at the state / National /International levels through University / Indian Olympic Association during the end semester external examination period will be promoted to subsequent semesters till the entire course is completed as per the guidelines of University Grants Commission Letter No. F.1-5/88 (SPE/PES), dated 18-08-1994.
- The Principal shall deal with any academic problem, which is not covered under these rules and regulations, in consultation with the Heads of the Departments in an appropriate manner, and subsequently such actions shall be placed before the academic council for ratification. Any

emergency modification of regulation, approved in the Heads of the Departments Meetings, shall be reported to the academic council for ratification.

19. AMENDMENTS TO REGULATIONS

The Academic Council may, from time to time, revise, amend, or change the regulations, Schemes of examination and/or syllabi.