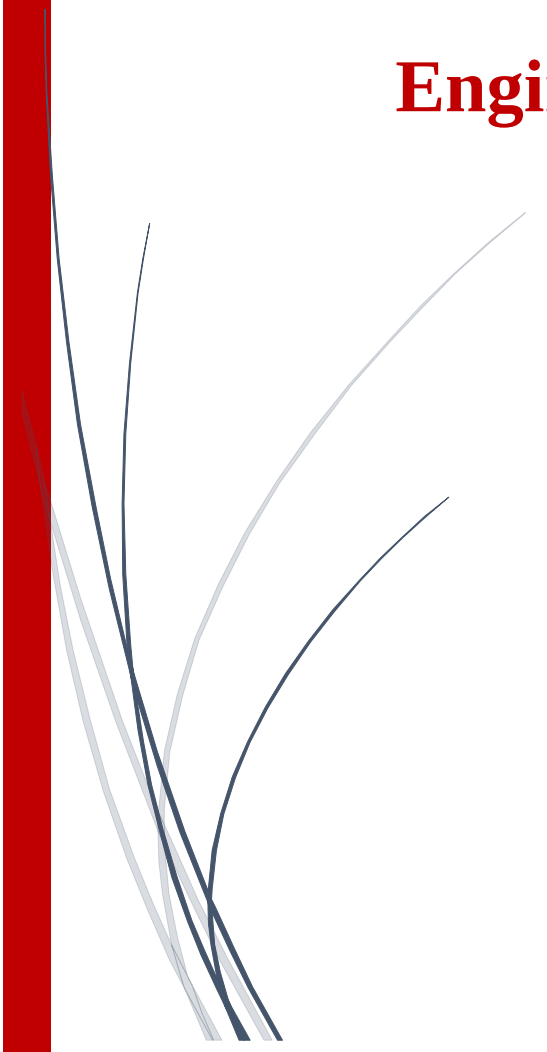
M. Tech Civil Engineering

2024-26

School of Engineering & Technology



Sushant University

Sector 55, Golf Course Road, Gurgaon

Programme Handbook -M.Tech (CE)

(*Applicable to students admitted in the academic year 2024- 2026)

PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this document, unless the context otherwise requires:

1. "**Programme**" means Degree Programme, that is M. Tech Degree Programme.
2. "**Discipline**" means specialization or branch of M. Tech Degree Programme, likeCSE, ECE, ME, Civil Engineering etc.
3. "**Course**" means a theory or practical subject that is normally studied in a semester,like basics of Design of RCC structure, Environmental Engg, construction management, Structure Analysis etc.
4. **"Director, Academic Affairs"** means the authority of the University who is responsible for all academic activities of the Academic Programmes for implementation of relevant rules of this Regulations pertaining to the Academic Programmes.
5. **"Dean/Director"** means head of the School concerned.
6. **"PD"** means Programme Director of the respective programme of the School concerned.
7. **"Controller of Examinations (COE)"** means the authority of the University who is responsible for all activities of the University Examinations.
8. **"SU/ University"** means Sushant University (Erstwhile Ansal University)
9. **"MSE"**- Mid-Semester Evaluation, "**ESE"**- End Semester Examination**, "SGPA"**- Semester Grade Point Average, "**CGPA"**- Cumulative Grade Point Average, "**TDC"-** Trans Disciplinary Certificate

Index

1. ADMISSION

1.1. Candidates seeking admission to the first semester of the four semester M. Tech Degree Programme

Should have Bachelor's degree in any Engineering stream or equivalent in the relevant field. Obtained at least 55% marks in the Bachelor's degree.

2. STRUCTURE OF PROGRAMME

2.1. Credit's requirement

Minimum credit requirement is 71 credits for a student to be eligible to get Post Graduate Degree in engineering.

2.2. Categorization of Courses

M.Tech Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

S. No.	Category	Suggested breakup of Credits (Total 71)
1	Core Courses	17
2	Discipline Specific Electives (DSE)	18
3	Generic Elective I (GE I)	4
4	Generic Elective II (GE II)	2
5	Dissertation or Internship	25
6	Skill Enhancement Course (SEC)	2
7	Ability Enhancement Course (AEC)	2
8	Service Learning/Community Service Based Course	1
	Total	**71**

2.3 Induction Programme

2.3.1. An induction programme with two weeks duration will be conducted before the commencement of I semester class as per the school curriculum or preference. The following physical activities shall be completed during the induction programme:

I. Physical fitness and Health

- Physical fitness Activities
- Sports/Games Related

II. Culture

- Learning an art form
- Heritage
- Intangible Cultural Heritage

III. Literature & Media

- Literature, Cinema and Media
- Group reading of classics

IV. Social Service

Social Awareness

- Social Service

V. Self-Development

- Spiritual, Mindfulness & Meditation
- Religion and Inter-faith
- Human Values
- Behavioural and Interpersonal skills
- Lectures

VI. Nature

- Nature Club
- Environment Protection (non-credit course)

VII. Innovation

2.3.2. Other Courses

- Constitution of India
- Universal Human Values
- Indian Traditional Knowledge
- Learning an art form

2.4. Bridge Courses

Lecture based Modules for Bridge Courses –introduction to Basic Civil engineering courses for students to help bridge the gap of their studies PG level and Soft skill before the commencement of I semester classes.

- Basic Civil Engineering Courses
- Soft Skills -1 Module with 8 Lectures

2.5. Number of courses per Semester

Each semester curriculum shall normally have a blend of lecture courses not exceeding 20 credits and Laboratory courses and Employability Enhancement Course(s) not exceeding 5 credits**.** Each Employability Enhancement (EE) Courses may have credits assigned as per curriculum.

2.6. Credit Assignment

Each course is assigned certain number of credits based on the following:

Contact period per week	Credits
1 Lecture period	1
1 tutorial Periods	1
2 Laboratory Periods (also for EE Courses like Seminar/project work/case study/etc.)	1

2.7 Industrial Training / Internship

2.7.1. The students may undergo Industrial training for a period (6-8 Weeks) as specified in the Curriculumduring summer / winter vacation. In this case the training has to be undergone continuously for the entire period.

2.7.2. The students may undergo Internship at Research organization University/Industry (after due approval from the Dean/Director) for the period prescribed in the curriculum during summer / winter vacation, in lieu of Industrial training. The students shall be permitted to carry out their internship between 2 and 3rd Semester. The report of which under the industry as well as faculty mentor to be submitted and presented in 3rd Semester.

2.8. Industrial Visit

Every student is required may go for 1 Industrial Visit as per the requirement.

2.9. Massive Open Online Courses

Students may be permitted to credit one online course under Massive Open Online Course(which are provided with certificate) subject to a maximum of two credits. The approved list of online courses will be provided by the concerned department from portals like Swayam, NPTEL,

edX, Udemy before the commencement of every semester. The credit attained through MOOC course has to be transferred to the marksheet of their respective semester and will be a compulsory course to meet the programme requirements. In a scenario, where the complete assessment is not done by the MOOC platform the School may conduct its own exam for evaluation of the respective course. The details regarding online courses takenup by students should be sent to the Controller of Examinations one month before the commencement of End Semester Examination.

2.10. Medium of Instruction

The medium of instruction is English for all courses, examinations, seminar presentationsand project / thesis / dissertation reports.

3. ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER

3.1. A student who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.

Every student is expected to attend all classes of all the courses and secure 100% attendance. However, in order to give provision for certain unavoidable reasons such as Medical / participation in sports, the student is expected to attend at least 75% of the classes.

Therefore, **he/she shall secure not less than 75%** (after rounding off to the nearest integer) of overall attendance.

3.2. However, a student who secures attendance between 65% and 74% in the current semester due to medical reasons (prolonged hospitalization / accident / specific illness) / participation in sports events may be permitted to appear for the current semester examinations subject to the condition that the student shall submit the medical certificate/ sports participation certificate attested by the Dean/Director. The same, after approval of the VC shall be forwarded to the Controller of Examinations for record purposes.

3.3. Except special circumstances as mentioned in clause 3.2, students who secure less than 75% attendance in all the courses of the semester and students who do not satisfy the other requirements as specified by their respective programme shall not be permitted to write the University examination at the end of the semester. They are required to repeat the incomplete semester in the summer exams, as per the norms prescribed and duly notified by the Controller of Examinations.

4. FACULTY MENTOR

To help the students in planning their courses of study and for general advice on the academic programme, the Dean/Director of the Department will attach a certain number of students to a teacher of the Department who shall function as Faculty mentor for those students throughout their period of study. The Faculty Mentor shall advise the students in registering and reappearance registering of courses, authorize the process, monitor their attendance and

progress and counsel them periodically. If necessary, the Faculty Mentor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty mentor shall be:

- To act as the channel of communication between the Dean/Director and the students of the respective group.
- To collect and maintain various statistical details of students.
- To inform the students about the various facilities and activities available to enhance the student's curricular and co-curricular activities.
- To guide student enrolment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

5. PROGRAMME COMMITTEE

5.1. Every Programme shall have a Programme Committee consisting of teachers of the programme concerned, student representatives and chaired by the Dean/Director. It is like a 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the Programme committee include-

- Solving problems experienced by students in the class room and in the laboratories.
- Informing the student representatives, the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
- Informing the student representatives, the details of regulations regarding weightage used for each assessment. In the case of practical courses (laboratory/ project work / seminar etc.) the breakup of marks for each exercise / module of work, should be clearly discussed in the Programme committee meeting and informed to the students.
- Analysing the performance of the students of the respective Programme after each test and finding the ways and means of solving problems, if any.
- Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.

5.2. The Programme committee shall be constituted within the first week of each semester by the Dean/Director.

5.3. At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the Programme committee depending upon the strength of the programme.

5.4. The Chairperson of the programme committee may invite the Faculty mentor(s) if required to the programme committee meeting.

5.5. The Programme Director is required to prepare the minutes of every meeting, submit the same to Dean/Director within two days of the meeting and arrange to circulate it among the students and faculty members concerned.

5.6. The first meeting of the Programme committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the regulations. Two or three subsequent meetings shall be held in a semester at suitable intervals. The Programme Committee shall put on the Notice Board the cumulative attendance particulars of each student at the end of every such meeting to enable the students to know their attendance details. During these meetings the student members representing the respective class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

6. COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the Course Coordinator shall be made by the Dean/ Director depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. Wherever feasible,the course committee may also prepare a common question paper for the internal assessment test(s).

7. EXAMINATION SYSTEM

7.1. The academic performance of students is adjudged by the aggregate of continuous mid Semester Evaluation (MSE) and the End Semester Examination (ESE).

7.2. Each course, both theory and practical (including project work & viva voce Examinations) shall be evaluated for a maximum of 100 marks.

- The weightage of End Semester Examination (ESE) to Mid Semester Evaluation (MSE) of all courses except TDL/Soft-Skills courses is 60% to 40%.
- The weightage of End Semester Examination (ESE) to Mid Semester Evaluation (MSE) of TDL/TDC and Soft-Skills courses is 40% to 60%.

7.3. Industrial training and seminar shall be may part of the course concerned.

7.4. The University examination (theory and practical) of 2 hours duration shall ordinarily be conducted twice in December and May for Odd and Even semester respectively.

End Semester Examination question paper pattern is given below:

A question paper for theory examinations of a course unit of any programme will be of 2 hours' duration with maximum marks 60 (weightage 60%) and will have three parts; Part A, Part-B and Part-C. (The duration of practical examinations will be as required and the value addition courses will have different format).

Part-A: 28 Marks (students are advised to devote approximately 50 minutes to 60 minutes out of total 2 hours on this part)

In this section, a student is required to answer 4 out of 5 given questions. Each question will be of 7 marks. These questions may include short numerical problems or theory questions to assess students' understanding of concepts and frameworks.

If needed in this part, a question might be designed to have maximum two sub- parts (a) and (b) with weightage of 3 and 4 or 4 and 3 marks respectively to enable testing on more concepts and frameworks.

Part-B: 20 Marks (students are advised to devote approximately 30 minutes to 40 minutes out of total 2 hours on this part)

In this part, a student is required to answer any 2 out of 3 given questions. Each question will have a weightage of 10 marks and may include long theory questions or numerical problems requiring students to apply the concepts to a given situation or in a given context and analyse a situation.

If a faculty feels that a question in this section needs to have sub-parts, there may be maximum two sub- parts provided that sub-part (a) involves understanding of a concept through a numerical or a theory question and sub- part (b) is application/ analysis of the concept used in sub-part (a).

Part-C: 12 Marks (students are advised to devote approximately 20 to 30 minutes out of total 2 hours on this part)

This part will be compulsory without any choice and will have a weightage of 12 marks. This may be a case study, a hypothetical problem or a situation seeking a possible solution(s), students' response to a situation based on general awareness of the broad discipline of study etc. The objective is not only to judge the skills of students to apply the concept to a particular situation or context but also to assess his/her analytical ability and how a student make realistic assumptions and can ascribe meaning to data (given in the question paper or to be assumed). The students will also be tested on integrative and evaluative skills by making

them apply more than one concept together in a given situation or the context.

7.5. The University examination for project work/dissertation shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding X students) by an external examiner and an internal examiner, followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner,the supervisor of the project group and an internal examiner.

7.6. For the University examination in both theory and practical courses including project work/Dissertationthe internal and external examiners shall be appointed by the Dean/Director in consultation with the Controller of Examinations.

8. PROCEDURE FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

8.1. Internal Assessment

For all theory and practical courses, the distribution of marks for various **components for the Internal Assessment** is shown below in the table:

8.1.1 For a course of 100 marks containing only Theory Component

Mid Semester Examination	Quiz(s)/ Presentation (s)	Assignment(s)	Attendance	Total
15	15	5	5	40

8.1.2. For a course of 100 marks containing only Lab Component

Mid Semester Examination	Lab/ practical performed & Lab report	Assignment(s)/ Quiz (s)	Attendance	Total
15	10	10	5	40

8.1.3. For a course of 100 marks containing both theory and Lab Component:

MID SEMESTER EVALUATION (40) – Theory (25 Marks) + Lab (15 Marks)

Theory (25)			
Mid Semester Examination	Quiz(s)/ Presentation (s)/Assignment	Attendance	**Total**
10	10	5	**25**
Lab (15)			

Mid Semester Examination	Lab/ practical performed & Lab report	**Total**
As 10	5	**15**
END SEMESTER EXAMINATION (60)		
Theory (35)		Lab (25)

8.2. TDCC Courses

For Inter disciplinary/trans disciplinary certificate courses the External Assessment Marks will be 40 and Internal Assessment will be 60.

8.3. Internship/Project Work

8.3.1. Here the Internal Assessment based on project prepared and submitted will be 40 and the External Assessment based on Viva-voce/presentation will 60 or vice-versa.

8.3.2. If a student fails to submit the project report on or before the specified deadline, he/ she is deemed to have failed in the Project Work and shall re-register for the same in a subsequent semester.

8.4. Seminar Papers

The Research paper is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 1 research paper before the evaluation committee and for each research paper, marks can be equally apportioned.The three-member committee appointed by the Dean /Director will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%). (As per School's preference).

8.5. Attendance and Assessment Record

Every teacher is required to upload on ERP the 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. The teacher is also expected to safely keep excel of the attendance and the assessments. The University or any inspection team appointed by the University may verify the records of attendance and assessment of both current and previous semesters.

9. EXAM REGULATIONS

9.1. Requirements for appearing for End Semester Examinations- A student shall normally be permitted to appear for the End Semester Examinations for all the courses registered in the current semester (vide clause 9.10) if he/she has satisfied the semester completion requirements.

9.2.-The students-will be graded under absolute 10-point **Grading Scheme** as given below:

Grade	Range	Grade Point Attached
O	>=95	10
A+	>=85	9
A	>=75	8
B+	>=70	7
B	>=60	6
C	>=50	5
D	>=40	4
F	<40	0
AB	——	0

9.3. Passing Criterion

A student has to fulfil the following conditions to pass M. Tech academic programme of the University:

- A student should earn minimum "D" grade in all courses separately. However, he/she can improve his/her grade ("D" grade onwards) by re-appearing.
- To pass a course, student must obtain 40% marks in the aggregate of Mid Semester Evaluation (MSE) & End Semester Examination (ESE). In order to pass a particular course, student must appear in the Final examination irrespective of the marks obtained in the Mid Semester Evaluation.
- For successful completion of a programme, the student should secure a minimum Cumulative Grade Point Average (CGPA) of 4.0 at the end of final year of the Programme.

9.4. Promotion to Next Year (Only School specific rules as approved by COE to be mentioned)

The promotion rules are applicable only for under-graduate programs across the university.

The promotion rules for M. Tech programme will be as under:

- The students will not be debarred from going to the 2nd year, irrespective of their result of the 1st year.

9.5. Exam Duration

All End Semester Examinations (ESE) would be of two hours duration unless specified otherwise.

9.6. Re-Appearing

There is a provision for re-appearing in the examination (without attending the course-work again) for a course. Re-appearing in examination will be in following cases:

- A student who fails to meet passing criteria in a course shall be eligible to re-appear in the examination of such course as and when scheduled, with a view to improve the performance.
- A student who fails to appear in the examination shall be eligible to subsequently re-appear in the examination when scheduled for next batch of students.
- The latest result obtained by the student in re-appear courses is considered as final and same will be considered for calculating his/her SGPA and CGPA.
- There is no provision of re-appear in the Mid Semester Evaluation (MSE). **Students who have not passed a course need to take the re-appear of the End Semester Examination (ESE). The previous internal marks shall be carried forward.**
- A student who has to re-appear in ESE in terms of provisions made above shall be examined as per the syllabus in the scheme of teaching applicable at the time of his/her joining the concerned programme. However, in cases where only some minor modifications have been made in the syllabus of the course(s) and the Dean/Director of the concerned Department certifies the same, the examination may be held in accordance with the revised syllabus.

9.7. Improvement of Score

- If a student has poor performance in number of courses in a particular term, he may at his option, take only one academic break for one year, and re-register for both the semesters of that academic year in the next academic year on payment of prescribed fee. Such a student may have the option of repeating any or all the courses in the semester(s) and retain the credits already earned by him in other course(s).
- A student shall be allowed to improve his SGPA and CGPA by re-appearing in the Examination(s) in the Courses of his choice when these examinations are held in normal schedule in which case his Mid Semester Evaluation (MSE) shall be carried forward. However, permission will not be granted to improve internal assessment. The best of the marks obtained in that subject(s) shall be taken into consideration for calculating the SGPA and CGPA and eligibility for award of a degree.
- A student, who has failed to meet the passing criteria (required CGPA), have the option to re-appear in the Final Examination (End Semester Examination) of those courses in which he/she desires to improve his/her performance in order to secure the minimum CGPA, when these examinations are scheduled for next batch of students. **Improvement is only possible in courses which have a written theory exam component in the ESE (VIVA, Jury and submission-based ESE cannot be taken for improvement).**
- Improvement in the score of courses completed by a student prior to his lateral entry in the

University shall not be allowed.

9.8. Methods for Redressal of Grievances in Evaluation

Re-Checking/Re-Evaluation of Answer Books of ESE:

- Student is entitled to ask for re-checking or re-evaluation of any of his/her paper(s) on the payment of prescribed fee within the stipulated time as notified by the Controller of Examinations.
- If the re-evaluated/ re-checked marks are less than the earlier obtained marks, the same less marks will be treated as final.

9.9. Disciplinary Control of Students in Examinations

- The student shall maintain proper discipline and orderly conduct during the examinations. They shall not make use of any unfair or dishonest means or indulge in disorderly conduct in the examinations.
- No student will be allowed to appear in the Examination unless he/she is carrying his/her **ID Card and Admit Card during End Semester Examination**. All the students reappearing in End Term Examination will be allowed with the valid admit card.
- If a student is found in possession of written/printed matter related to the subject of examination on anything (such as mobile phone, piece of paper or cloth, scribbling pad etc.), other than the answer book, any other response sheet specifically provided by the University to the students, it will be treated as act of unfair means and such cases will be forwarded to Unfair Means Committee.

9.10. Duration of the Programme

The minimum period required for completion of a programme shall be as specified in the Scheme of Teaching and Examination and Syllabi for concerned programme approved by the Academic Council on the recommendations of the Board of Studies.

The maximum number of years within which a student must pass the credit requirements for award of a degree is as follows:

- The programs up to 2 years duration = n+1 year

The maximum permissible period includes, academic break, if availed by the student.

9.11. Grade sheet

After results are declared, Grade Sheets will be issued to each student which will containthe following details:

- The list of courses registered during the semester and the grade scored.
- The Grade Point Average (GPA) for the semester.
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards would be shown on the final semester grade sheet.

The Semester performance of a student is indicated as "Semester Grade Point Average (SGPA)". The SGPA is weighted average of Grade Points of all letter grades awarded to a student for all the Courses in the semester. The formula for Computing SGPA is given below:

$$SGPA = \frac{\text{Grade points secured in the Semester}}{\text{Associated Credits in the Semester}}$$

The overall performance of a student in all the previous Semester(s) including the current Semester is indicated as "Cumulative Grade Point Average (CGPA)". The Cumulative Grade Point Average (CGPA) is the weighted average of grade points of all letter grades awarded to a student for all the courses in the previous Semester(s) including the current Semester. The formula for computing CGPA is given below:

$$CGPA = \frac{\text{Cumulative Grade points secured in all the previous Semester(s) including the Current Semester}}{\text{Associated Credits in the previous Semester(s) including the current Semester}}$$

CGPA to Percentage Conversion Formula is given below: Percentage (%) = CGPA (X) 10

9.12. Eligibility for the Award of the Degree

A student shall be declared to be eligible for the award of the M.Tech Degree provided the student has

- Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
- Successfully passed all the Courses as per curriculum.
- Successfully completed the Programme requirements, appeared for the End-Semester examinations and passed all the subjects prescribed.
- The award of Degree must be approved by the Academic Council of SU.

9.13 Declaration of Result

The university shall strive to declare the results of every examination conducted by it within a period of thirty days from the last date of the examination for that particular programme/course and shall in any case declare the results latest within a period of forty-five days from such date

9.14 Convocation

Convocation of the university shall be held every academic year for conferring degrees, diplomas, certificates and shall be conducted as specified in the Act/Statues. The dates for the convocation (normally within six months) shall be notified well in advance to all the students.

10. PROVISION FOR AUTHORISED BREAK OF STUDY

10.1. Students who apply for Academic Break and the case is recommended by the Deans/Directors for justifiable reasons to be recorded, can be granted academic break of one year to the students, if approved by the Vice Chancellor, under the following circumstances:

- The student has been continuously ill.
- Career advancement
- Justified personal reasons.

10.2. The student who is granted academic break shall not be required to pay the academic fee for that year. However, on re-joining, he/she will pay the fee applicable to the batch he/she joins.

11. DISCIPLINE

Every student is required to observe discipline and decorous behaviour both inside and outside the University and not to indulge in any activity which will tend to bring down the prestige of SU. The disciplinary committee of the University enquires into acts of gross indiscipline and notify the University about the disciplinary action taken against the student.

12. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

SU may from time-to-time revise, amend or change the Regulations, Curriculum, Syllabus and scheme of examinations as proposed by the BOS and approved by the Academic Council.

13. EXTRA/ CO-CURRICULAR ACTIVITIES OF THE SCHOOL

The Schools may have the activities like Physical Activities (Sports), Cultural, literature and Media, Social Service Scheme (NSS), Self-Development such as Yoga and Human Values, Nature Club,Yoga, etc. focusing on the holistic development of its students. A brief profile of School's respective Committees to be added.

There are Seven Club/committees at the School level

- Unnat Bharat Abhiyan
- Dramatis Club
- Literary Club
- Computer society of India Club
- Sports Club
- Tracking Club
- Cultural Club

14. PROGRAMME STRUCTURE OF THE RESPECTIVE PROGRAM

Curriculum Design

M.Tech – Civil Engineering

The **Masters of Technology (M.Tech) - Civil Engineering** is a 2 Year Program. This M.Tech program will be delivered along with our industry partner **CADD Centre**. It will enable students to learn & develop specific skillsets pertaining to the field of Structure Engineering. The specialization is initiated from the very first semester of the program to enable a student to develop skill sets in the area of interest. The total credits of the program are 71 that are divided among 4 semesters leading to a postgraduate degree.

This program trains individuals in advanced concepts of structural engineering by in-depth coursework, hands-on modeling projects and dissertation work. Students undergo coursework during the first year on various aspects of structural engineering and apply these constructs to a major research project during the second year. Students are imparted advanced learning in Analysis and Design of Structures, Structural Dynamics and Earthquake Resistant Design of Structures, Repair and Rehabilitation of Structures and Advanced Materials. The students are exposed to practical learning by working on real-world projects in the Structure Design lab integrated with latest design software. The **CADD Center** provides all the latest software for Structure analysis and design throughout the M.Tech program

The practical lab sessions require students to apply theoretical knowledge to realize their value through implementation. The objective of the program is to produce structural engineers who integrate and build on the Program's core curricular concepts in the pursuit of professional leadership, teamwork, life-long learning, and career advancement.

The **First Year** of the M. Tech program imparts foundations and basic knowledge with **Basic Structure analysis and design** and **Branch specific** software of specialization and the **Second year** prepares the students for more in-depth knowledge with **Structure analysis & design labs like (Stadd Pro, E-Tab, Sap**) along with dissertation of specialization. The courses of the program have been designed in line with the National Education Policy 2020, UGC's Choice Based Credit System (CBCS) and NAAC's recommendations.

The existence of **Core Courses** to the tune of **29%** (*which is well in the range as suggested by CBCS & NAAC*) is to enable and equip students with the fundamental knowledge and skill essential to gain technical knowledge is specified field.

Discipline Specific Electives Courses (DSE) constitutes **22%** of the total percentage. This includes

courses related to the specialization field of Structure Engineering.

Two **Skill Enhancement Courses (SEC)** as suggested by the CBCS are part of the postgraduate program offered by the school. These courses are Personality Development & Constitution of India that adds value in the form of skills that are a pre-requisite for a good management professional.

The school acknowledges the importance of Ability Enhancement Course (AEC) and fulfills the requirement by course of English Communication in the curriculum. The course strengthens the student's communication skills and interview proficiency by means of specially curated modules.

Sushant University takes pride in imparting Trans - Disciplinary Education that is achieved through Trans - Disciplinary Certificate Course (TDCC) that forms a part of the 2nd and 3rd semester of the M. Tech curriculum wherein the students can opt. any courses from the university level basket of courses related to social sciences, liberal arts, humanities and other genre.

The Curriculum of M. Tech Civil Engineering has an interesting course of Global Business, which falls under Generic Elective II. This is a certification course offered by Harvard Business School Online (Partners of SU). This course offers a platform to learn the entrepreneurial competencies with a very diverse group of international students and along with being taught by expert international faculty members.

Dissertation/ Projects/ Internships form an integral part of the program structure and takes into account of 25% weightage of the total course, which is in line with the latest guidelines issued by UGC.

SNAPSHOT

Name of the Program – M.Tech in Civil Engineering
Program Code- SETP004
Duration of the Program – 02 Years
Total Semesters – 04 Semesters
Total Credits of the Program – 71 Credits

Color Code	Nature of Courses	Actual Percentage
	Core Courses	23.93%
	Discipline Specific Electives (DSE)	25.37%
	Generic Elective I (GE I)	2 Course (TDCC)
	Generic Elective II (GE II)	1 Courses
	Dissertation/Project/Internship	25 Credits
	Skill Enhancement Course (SEC)	2 Course
	Ability Enhancement Course (AEC)	1 Courses
	Service Learning/Community Service Based Course	0 Course

Core Courses
Discipline Specific Electives
Generic Elective I (GE I)
Generic Elective II (GE II)
Dissertation or Internship
Skill Enhancement Course (SEC)
Ability Enhancement Course (AEC)
Service Learning/Community Service Based Course

FIRST YEAR
SEMESTER I

Course Code	Course Title	Lectures (L) Hours/ Week	Tutorial (T) Hours/Week	Practical (P) Hours/ Week	Total Credits
Core Courses					
19MTC-1RM11T	Research Methodology	2	0	0	2
19MCE-0NA11T	Numerical Analysis & FET	3	0	0	3
19MCE-0DM11T	Disaster management	3	0	0	3
19MCE-0EA11T	Environmental Impact Assessment	2	0	0	2
Core Courses Lab					
21MCE-0SP11L	Staad Pro Software Lab	0	0	2	1
Discipline Specific Electives					
19MCE-0ND11E	Non-Destructive Testing Of Structures	3	0	0	3
19MCE-0SA11E	Advanced Structure Analysis	3	0	0	3
19MCE-0MS11E	Masonry Structures	3	0	0	3
Skill Enhancement Course					
19MTC-1PD11T	Personality Development	1	0	0	1
	Total	**16**	**0**	**2**	**17**

SEMESTER II

Course Code	Course Title	Lectures (L) Hours/ Week	Tutorial (T) Hours/ Week	Practical (P) Hours/ Week	Total Credits
Core Subjects					
19MCE-0BM12T	Eco-Friendly Building Materials	3	0	0	3
Core Courses Lab					
21MCE-0ET12L	E-Tab Software Lab	0	0	2	1
Skill Enhancement Course					
19MTC-1CI12T	Constitution of India	0	0	2	0
Ability Enhancement Compulsory Course					
21MTC-0EC12T	English Communication	2	0	0	2
Generic Elective I (GE I)					
TDCC	Trans- Disciplinary Certificate Course	1	0	2	2
Discipline Specific Electives 2					
19MCE-0RC12E	Advanced Design of RCC Structure	3	0	0	3
19MCE-0BE12E	Bridge Engineering	3	0	0	3
19MCE-0SD12E	Structural Dynamics (SE	3	0	0	3
Discipline Specific Electives 3					
19MCE-0ER12E	Earthquake Resistant Design of Structures	3	0	0	3
19MCE-0RS12E	Reliability of structures	3	0	0	3
19MCE-0BS12E	Building Services & Maintenance Managemer	3	0	0	3
Discipline Specific Electives 4					
19MCE-0TB12E	Design of tall buildings	3	0	0	3
19MCE-0FE12E	Finite Element Methods	3	0	0	3
19MCE-0PS12E	Theory of plates and shell	3	0	0	3
	Total	**15**	**00**	**6**	**17**

SEMESTER III

Course Code	Course Title	Lectures (L) Hours/ Week	Tutorial (T) Hours/ Week	Practical (P) Hours/ Week	Total Credits
Core Courses Lab					
21MCE-0TS21l	Tekla Software Lab	0	0	2	1
Generic Elective I (GE I)					
TDCC	Trans- Disciplinary Certificate Course	1	0	*2	2
Generic Elective II (GE II)					
21MTC-OGB21C	Global Business	0	2	0	2
Dissertation or Internship					
19MCE-0DT21D	Dissertation I	0	0	10	10
Open Elective					
19MCE-0IW21E	Industrial Water Technology	3	0	0	3
19MCE-0FC21E	Formwork for Concret structures	3	0	0	3
19MCE-0CM21E	Construction Contrac Management	3	0	0	3
Discipline Specific Electives 5					
19MCE-0SS21E	Advanced Design of stee structures	3	0	0	3
19MCE-0FD21E	Advanced Foundation Design	3	0	0	3
19MCE-0OS21E	Design of offshore Structure	3	0	0	3
	Total	**7**	**2**	**14**	**21**

Semester IV

Course Code	Course Title	Lectures (L) Hours/ Week	Tutorial (T) Hours/ Week	Practical (P) Hours/ Week	Total Credits
Core Courses Lab					
21MCE-0RS22L	Revit Softwar Lab	0	0	2	1
Dissertation or Internship					
19MCE-0DT22D	Dissertation II	0	0	20	15
	Total	**0**	**0**	**22**	**16**